

6 HOT READY-TO-RUNS UNDER \$350

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GIANT ISSUE!

NOVEMBER 2003

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ASSOCIATED RC10T4 | OFNA LD3 PRO | HPI SUPER RS4

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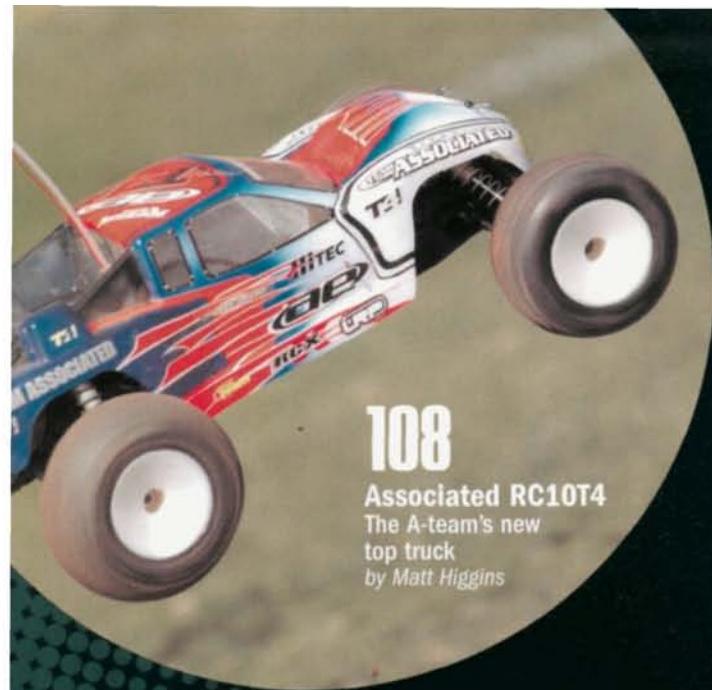
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Ready-to-run redux



Remember when ready-to-run vehicles were the exception to the kit rule? Back when nearly every car and truck arrived as a pile of plastic bags stuffed into a clear body, the notion of buying an already-built machine seemed like wimping out. Cheating. OK for beginners maybe, but for a real RC guy? Never.

How times change! RTRs are rapidly becoming the rule for RC, and kits are on the way to developing "exception" status. It's easy to see why, as this month's "6 Hot RTRs for under \$350" makes it difficult to find a reason not to go RTR. Selection isn't an issue; there are cars, trucks and buggies of all shapes and sizes. Performance is a no-brainer; most electric RTRs include electronic speed controls and motors that handily outperform the old silver 540 standard, and nitro-powered machines seem to be engaged in a horsepower war (winner: you).

So, what's the downside? Well, there is an obvious one: if you like to build (as I sure do), you miss your shot at a bench session. Electronics choice is another issue; RTRs take away the option of choosing your favorite servos, speed control and radio gear. Yes, you can swap out the electronics that came with your RTR, but you still have to pay for them. That's why I like the idea of RTRs being offered in two modes: truly RTR, right down to installed radio gear; and "prebuilt", minus electronics.

As for missing out on building a car or truck yourself ... well, that's a tougher nut, but there may be hope. HPI has flipped the "kit first, then RTR" paradigm by offering the Nitro RS4 3 and Savage 21 first as RTRs and then following them up with kit versions in hopped-up "SS" trim. We'll have to wait and see whether other RTR makers start offering prebuilts and kit versions of their RTRs, but one thing is certain: the companies won't offer them unless they know you want them. So if you want to build your own car or truck (T-Maxx guys, I'm lookin' at you), or you want to buy it assembled minus the radio gear, drop a line to your favorite manufacturers. They'll appreciate your input!

IN THIS ISSUE

6 HOT RTRS UNDER \$350. There are way more than 6 great RTR values in RC, but we picked 6 favorites. Nitro and electric, monster truck, touring car and stadium truck, They're all here, with blazin' action shots to get you psyched.

MONSTER-BLOCK MELTDOWN. "There's no replacement for displacement," as they say, and you'll find RC's biggest engines right here. Along with all the specs, we spell out all the jargon so you can satisfy your heavy-horsepower jones.

HOW TO: BUILD CUSTOM TIRES. The factory pro's often win races on tires you can't buy, but you can build them yourself. Our man Nick Sava shows you how to turn CA and scissors into radical rubber for your ride.

THE T4 AND MORE! We have four killer "Track Tests" in this issue. The much-anticipated Associated RC10T4 is race-tested, and XTM Racing's aptly named X-Cellerator stadium truck takes on a BMX track. HPI's first-ever electric "super" scale car hits the road with Novak brushless power, and we test OFNA's race-ready LD3 Pro nitro tourer.

Until next time,

Peter Vieira
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D5 HOTSTUFF

Flatliner Arm vs Round Wire



Trinity presents the latest in R/C modified motors.....

"Flatliner FlatWire™ technology produces a low polar moment of inertia due to the shape of the wire and the fact it makes a neater compact pattern closer to the armatures core. This allows the armature to start and stop faster for more punch off the line and out of the corners. The increased surface area of FlatWire against the armature web saturates the armature laminations to a greater degree than possible with round wire. The result is a more powerful, more efficient armature for the same number of turns versus round wire."

The D5 Flatliner armatures come in doubles and singles and will fit P-94, D4, D3.5, Speedgems and most modified motors made by other manufacturers. The singles are quite awesome and are the ones Josh and I recommend.

Jim Dieter

www.teamtrinity.com



MAD FARCE

I want to tell you a story about my Kyosho Mad Force. When I was driving it the other day, all of sudden, it took off at full speed. It went all the way across my backyard, and I thought the bushes would stop it, but it went right between them. I couldn't see it, but I heard it hit something. I could tell it was now going in a different direction, and it sounded as if it went behind my neighbor's house. I ran to where I thought it would come out, and I got there just in time to see it go down the street.

Luckily, I live on a dead end, so there wasn't any traffic, but the kid at the end of the street skateboards and he had his ramp set up. My Mad Force hit it and jumped wide open into his yard. I was glad that the truck landed upside-down, but by this time, the engine was revving like crazy. It stopped right away because the tank was almost empty. The antenna tube came out and the top of the body was pushed in, but everything else was OK. I think Kyosho makes a really tough truck. [email]

Matt Hamill

Well, I guess so! But you didn't mention why your Mad Force turned runaway on you. Find out why and fix it!

—Pete

GOALIE DUDE'S GOT GOALS

I've been into RC cars for a couple of years, and I love your magazine. I am going to be a senior in high school and plan to go to college to study engineering. I would love to end up working in the RC industry. Maybe you guys could do an article about what kind of degrees people in the industry have, especially

those who work behind the scenes developing the cars. Feel free to include my email address. [email]

Chris Hamlin

goalie_dude@hotmail.com

Some guys, like the dudes who sculpt bodies, might have degrees in fine art. Designers may have degrees in engineering or manufacturing, and many times, the best car guys have simply been involved in RC for a long, long time and rely on experience as their education. I've included your email address, so if any of you industry guys want to give Chris some advice, go for it!

—Pete

PINION OPINION

I'm 14 and have been in the hobby for about six months. I have a Stampede (for now, until I get my B4), and it is mostly stock except for a Trinity Monster Horsepower stock motor. I run the stock gearing which is 87T/18T, but I wonder what size pinion to go down to. I'm thinking about 16T, but I'm really not sure.

Tommy Dang

Garden Grove, CA

Finding the right gear ratio isn't an exact science; basically, you try different ratios until you find the one that gives you the mix of torque, speed and run time that you prefer. You probably don't need to change your gearing at all to run your new Trinity motor. If anything, you might try going up a tooth, since the Monster Horsepower stocker should have more torque than the Stampede's included Stinger 20-turn powerplant.

—Pete

THE GT CONNECTION

You have an awesome magazine. I'm just writing to state a fact about the diff for the Associated B4 and T4. Every article I read says that it comes from the GT, but if you look back at the T2, you'll see that it also had the 2.6:1 diff.

Kevin Donald

Leavenworth, KS

Right you are, Kev; the T2 also used the GT's differential. But since the diff was in the GT first and is still in the GT, we say the B4 and T4 have a GT diff, not a T2 diff. Glad to see you're watching the details, though. I'll send you some decals!

—Pete

Cool STUFF

MOTOR Kooling Stand



Black billet aluminum motor stand/heatsink with cooling fan. Designed to quickly and safely cool down your stock or modified motor between runs. No more trying to work on a **HOT** motor in order to make the next heat. Fan can be run off a 6 volt battery or power supply.

RC2085, \$29.99

BATTERY Kooling Stand



Foam car stand and battery cooler with oversized fan. Cools two stick or side by side packs at one time. Lets you get your packs back on charge quicker.

RC5112, \$15.99



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readers write

FARM FEUD?

In "Readers Write" in the August 2003 issue of *RC Car Action*, I noticed that someone used the word "hick" to identify that he lives in a town or county that has many farmers. I'm not sure if he himself is a farmer, but I feel very strongly about people calling farmers "hicks." Though I can't speak for all of my farmer friends, and even though we live very different from others, we work hard. If people don't understand that we do endless duty on the farm and fields, why must they criticize us? I am a farmer and have been in RC competition for almost a year now. People must understand that farmers are just like other people. They just work on a farm. We know just as much about technology as you do. Please understand my point of view.

Keith Pieschek
Green Bay, WI

Keith, all the letter writer said was "I live in a hick town in Vermont" (Swanton, to be exact). He never mentioned farmers! I used to work on a farm myself, and I

know how hard you boys work. And you're right about farmers knowing their technology; when a tractor breaks down in the middle of some field on the other side of town and all you have to fix it with is a rock and your shoelaces, you have to get pretty creative.

—Pete

MUCH MORE MUCH MORE INFO

I'm very interested in the Team Much More CTX-M Motor Master dyno that I saw in "Must-Have Tools" (October 2003), but its source guide didn't list contact info for Team Much More. Can you help me out? [email] Darius White

Sure thing. Schumacher USA handles the CTX-M Motor Master, as well as the Take-Off car stand we also featured. To reach Schumacher, call (813) 889-9691, or visit racing-cars.com. We also forgot to give contact info for Orion, whose Quick Set lathe was featured. Click over to team-orion.com, or call (714) 694-2812.

—Pete

YOU SAID IT

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TRINITY

"Enforce the rules that let everyone have a great time"

I have been at this hobby for about 3 years. I have an Associated T3 and a TC3 that I treat like babies, but it's so difficult to keep them maintained because of the price of extra parts. Those people who can afford it seem to rub it in your face as if you're a nobody. When I raced my TC3 for the first time, this one kid had his Losi Triple-XS hopped up to the max, and all I had was a stock RTR. I don't even know why he was even in the rookie class. I was in front of him until the A-main. I hit the turn wrong, so the front wheels got wedged on the wall. The turn marshal, taking his sweet time, as always, didn't see me. So I was stuck! I remember hearing the kid's dad saying, "If you can't beat 'em, bash 'em." So the kid comes at me full speed and smacks the back of my truck; it broke everything on the front end—totaled it. He didn't even get called for it. Of course, I was out. I just want these problems to stop. I know this kinda stuff goes on elsewhere. I want to tell everyone who owns a hobby store and has races to enforce the rules that let everyone have a great time and race and not allow desperate maneuvers in order to win.

Josh McLean
Soquel, CA



Each month, "Readers Write" sponsor Team Trinity awards the "You said it" letter writer the Reference body of his choice. This is the Trinity shell for the Traxxas Stampede.

Well, Josh, that really stinks. It stinks that the other guy would hack you intentionally (egged on by his dad, no less!). It stinks that they didn't offer to pick up the tab on the parts they broke, and it stinks that the track operator didn't let everyone at the race know that kind of driving simply won't be tolerated. At most tracks, this sort of thing doesn't fly ... but readers, if it's going on where you race, ask the track operator to make it stop. Breaking stuff isn't fun!

—Pete ■

BY JOHN HOWELL

THE LATEST STUFF • SPY SHOTS • INSIDER INFO



BIG BAD BEHEMOTH!

HTM racing Project Mammoth

XTM Racing has been testing a prototype of its latest monster truck—Project Mammoth. The Mammoth is a supersized version of XTM's X-Terminator racing buggy; dimensions have been increased in all directions. It's approximately 2 inches wider than a T-Maxx and about 4 inches longer. And look at the included 24.7 engine! It looks tiny in comparison with the chassis! This is one big truck. It sports a 2-speed tranny, and its top speed is conservatively estimated to be more than 50mph. At press time, there's no word on a release date, but if the guys at XTM are this far along with the project, you can bet that it won't be too long before the truck hits the shelves.

XTM Racing; distributed by Global Hobby Distributors (714) 964-0827; globalhobby.com.

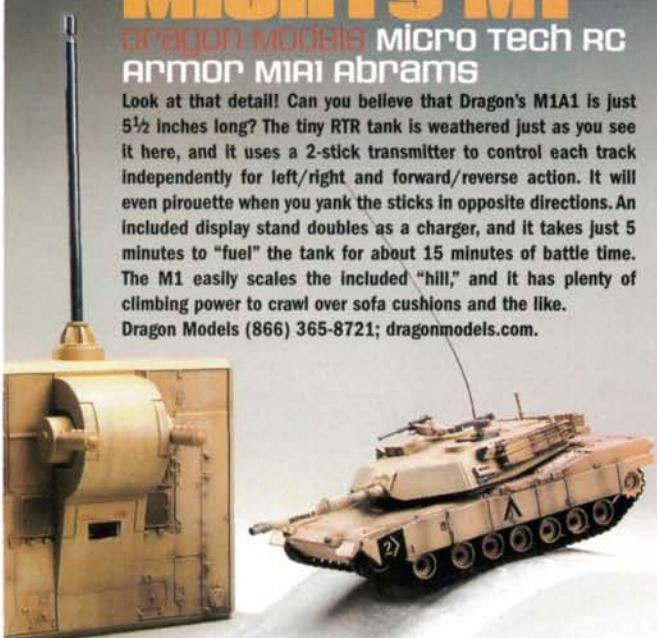


MIGHTY M1

Dragon Models MICRO TECH RC
ARMOR M1A1 Abrams

Look at that detail! Can you believe that Dragon's M1A1 is just 5½ inches long? The tiny RTR tank is weathered just as you see it here, and it uses a 2-stick transmitter to control each track independently for left/right and forward/reverse action. It will even pirouette when you yank the sticks in opposite directions. An included display stand doubles as a charger, and it takes just 5 minutes to "fuel" the tank for about 15 minutes of battle time. The M1 easily scales the included "hill," and it has plenty of climbing power to crawl over sofa cushions and the like.

Dragon Models (866) 365-8721; dragonmodels.com.



SPIED! LOSI'S NEW MONSTER!

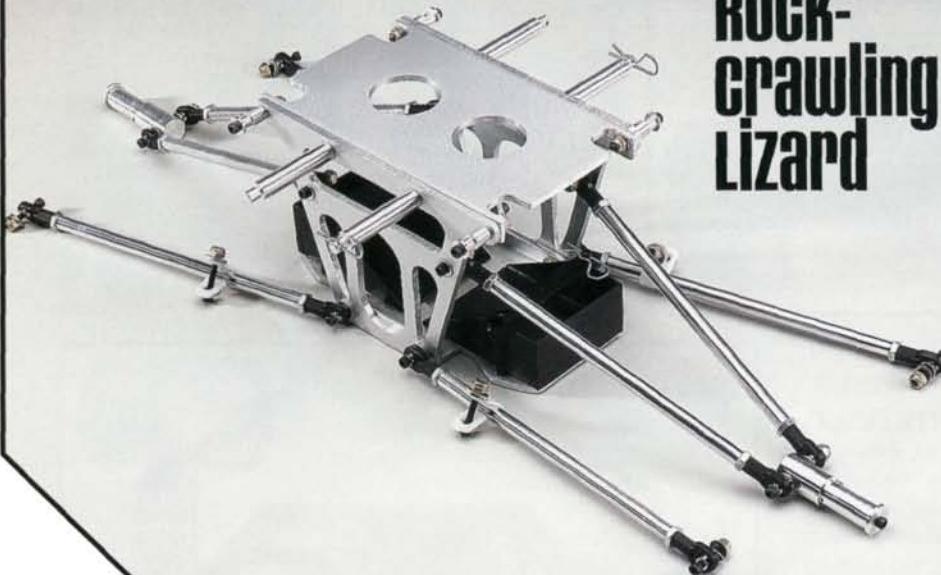
Team Losi prototype MT

We recently confirmed that Team Losi has been testing a prototype monster truck at off-road tracks in Southern California. We've been told that the truck is massive and has a host of ground-breaking features. Team Losi is keeping the lid on the details, but we plan to have something more solid to report in our next issue! Meanwhile, if you just can't wait, check out our website at rccaraction.com for updates. Team Losi; distributed by Horizon Hobby Inc. (800) 338-4639; teamlosi.com.



INSTA SCOOP

Rock-crawling Lizard



RC GUY Gecko Rock crawler clod buster chassis

If you're looking to have serious fun and you live near any rocky areas, build a competition-style rock-crawler; they're a total blast! Or check out the handiwork of the gang over at RC Guy; they offer a rock-crawler chassis that uses your existing Tamiya Clod Buster drive train. The kit goes by the name of "Gecko" and comes with a main chassis, battery cups, multi-link suspension arms, detailed instructions and all the hardware you'll need.

RC Guy (250) 723-0704;
rcguy.com.

MONSTER HEAD!

Fits Sirio .18's & Traxxas 2.5

Control engine temperatures by adding & removing fins. Higher performance, easier tuning. Longer lasting plugs, longer lasting engine!



RC8133, Sirio .18 Monster Head, (head, cap, fin, screws), \$55.99
RC8136, Traxxas 2.5 Monster Head, (head, cap, fin, screws), \$55.99
Extra fins available, Sirio (RC8134), Traxxas (8137) \$10.99

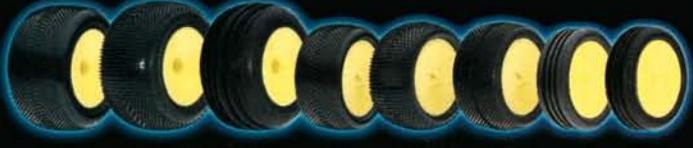


When Just A Little Head Won't Do!

www.teamtrinity.com

Sirio Version Shown

RADICAL NEW RUBBER



PRO-LINE R3 compound

Pro-Line's new "R3"-compound tires are for use on hard-packed, blue-groove tracks. A year of research and development stands behind this new compound, and in tests, it eliminated the "washing out" syndrome with the sudden "hooking-up" in the corners. It's also said to last up to five times longer than Pro-Line's M3 compound! In the R3 tires' debut at the Cactus Classic, Mark Pavidis TQ'd and won the 4WD class with it. At the Silver State Nitro Challenge, Jared Tebo won the Gas Truck class with his R3 tires, and Billy Easton recently captured his third straight ROAR Gas Truck Title using them. As with all Pro-Line tires, foam inserts are included, and R3s will be available in Pro-Line's most popular 1/10-scale truck and buggy treads.

Pro-Line (909) 849-9781; pro-lineracing.com.

The King's Crown



King Headz cylinder heads

These new CNC-machined King Headz are designed for .12, .15 and .21 engines and made of high-grade 6262-T6 billet aluminum. Their large, cooling surface area effectively dissipates heat. According to King Headz, engines using this head run at operating temperatures that are between 50 and 60 degrees less than engines equipped with a stock cast head. The King Headz are available for a wide variety of engines, so check with the company for availability. King Headz (219) 405-1024; kingheadz.com.

Killer B *Especially for the Associated B4*



Reference



TRI39300

NEW MAXX LIDS



PRO-LINE CADILLAC EXT & CHEVY SILVERADO HD OFF-ROAD CONCEPT

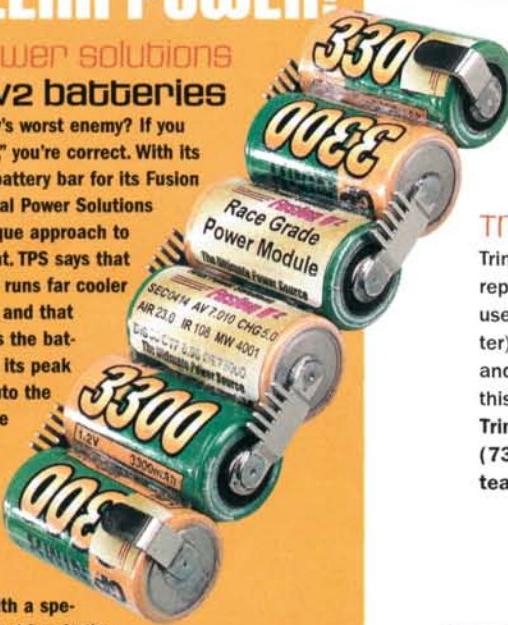
Pro-Line now offers a couple of new bodies for the Traxxas T-Maxx and the HPI Savage. The Cadillac EXT lacks nothing a true scale counterpart should have, and it's ready for thrashin' and bashin' over the roughest terrain. Pro-Line has also released an all-new Silverado HD off-road Concept body with the serious off-road look of the Baja championship racers. The company's team of off-road enthusiasts worked hard to bring this true off-road look to all Maxx and Savage owners. Both bodies come with window masks, paint-and-peel protective film and a detailed decal sheet.

Pro-Line (909) 849-9781; pro-lineracing.com.

NUCLEAR POWER!

TOTAL POWER SOLUTIONS FUSION V2 BATTERIES

What's a battery's worst enemy? If you answered "Heat," you're correct. With its heat-sink-style battery bar for its Fusion V2 batteries, Total Power Solutions (TPS) has a unique approach to dealing with heat. TPS says that the battery core runs far cooler with these bars, and that ultimately allows the battery to maintain its peak voltage longer into the run. TPS sells the pack as you see it—completely assembled. The cells and bars are soldered together on an assembly line with a special technique that bonds the solder to the cell in milliseconds. The time when cells are most likely to be damaged is when they're assembled into packs; TPS's process drops the assembly temperature by a good 200 degrees, and it creates a more uniform solder joint. The batteries will be available in three grades—Club, Race and Team versions. Total Power Solutions (954) 345-8792.

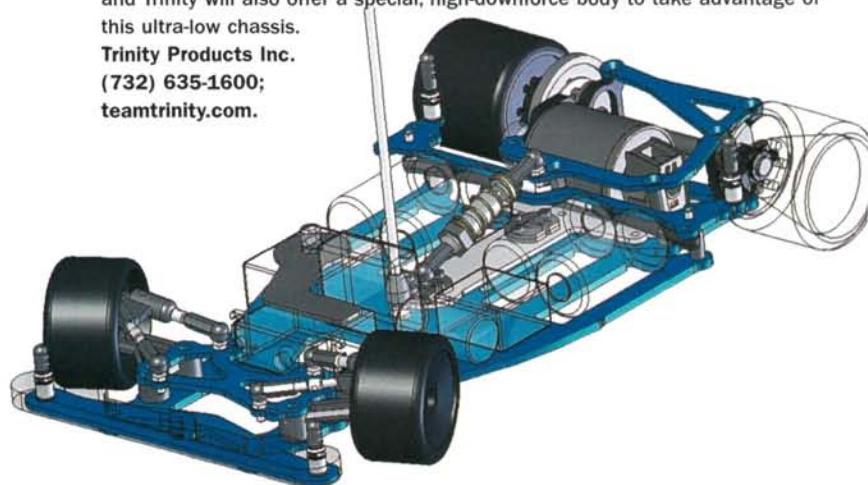


QUICK REFLEXES

TRINITY REFLEX 12 ON-ROAD CAR

Trinity is set to release its newest 1/12-scale racer—the Reflex 12. Early reports are that it will have an extremely low center of gravity. It's designed to use super-low-profile tires (from 2.10 inches down to 1.70 inches in diameter), and it has a low-profile rear pod. The body can really be slammed down, and Trinity will also offer a special, high-downforce body to take advantage of this ultra-low chassis.

Trinity Products Inc.
(732) 635-1600;
teamtrinity.com.



Insider's Scoop

Awesome Alfa



protoform Alfa Romeo 2.1

Protoform offers a new body—the Alfa 2.1—for all you nitro heads. This 200mm shell meets ROAR specs and features a large rear wing that's highly adjustable to ensure good handling balance. New are the unique "inner spill-plates" that can be added to the wing to enhance stability. According to

Protoform, this new body is designed to "turn in hard and rotate quickly" through tight turns.

This body comes with a protective coating, a sticker sheet, wing hardware and a "helpful hints" sheet to help racers find the right aero setup for any track configuration.

Protoform; distributed by Pro-Line (909) 849-9781; pro-lineracing.com.

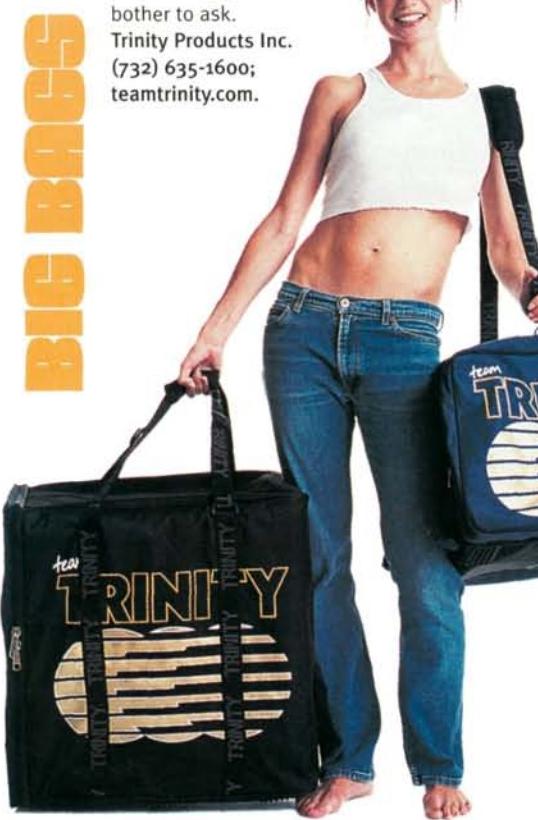
Trinity

Monster Hauler XXL & Maxx-plus Hauler XXL

Trinity recently released two new sharp-looking carryalls to get your gear to the track: the Monster Hauler Bag XXL (based on the original Monster Hauler) and the Maxx-Plus Hauler Bag XXL. The Monster has larger inner boxes to accommodate 1/8-scale buggies and 1/10-scale racing trucks. It's in black and has the Trinity logo on the side. Use the Maxx-Plus Hauler to carry your Traxxas Maxx and other trucks of similar size. You'll have room for fuel, cleaning spray, your radio, spares, etc. The bag is available in black with blue trim and the Trinity logo. And no, our model, Cassandra, does not come with or deliver the bags, so don't

bother to ask.

Trinity Products Inc.
(732) 635-1600;
teamtrinity.com.



BIG BAGS
BIG BAGS



BOLT-IN
SPEED

Fantom Racing FR18T-MAXX replacement engine

Fantom Racing now offers a super-size small-block for the Traxxas T-Maxx. This .18 rear-port exhaust engine can be dropped right in without modifications. Bolt the Traxxas EZ-Start system to it, and slide the stock clutch on. Because the engine comes with a slide carb, the stock linkage fits, too. The engine comes with a custom manifold and includes a glow plug and an air filter. Its other cool features include ABC construction, a knife-edge rod and a turbo crank. Fantom tells us that the engine cranks out 1.95hp at 41,250rpm—pretty impressive numbers for a .18 sport engine.

Fantom Racing (269) 649-9583; fantomracing.com. ■

READERS' RIDES

YOUR BEST BUILDS

BY JOHN HOWELL

JARED GLADDEN, ANTELOPE, CA

HOMEBOUGHT ASSOCIATED T3 MONSTER

With limited funds and a wish for a monster truck, Jared decided to build up his old Team Associated T3 into a custom truck. Jared fabricated the chassis and then slapped on a set of IMEX wheels and tires and used a set of RPM ball cups and body mounts. To move his monster, Jared went with a Trinity Speed Gem motor. A Parma truck body tops it off, and the "Nathanizer" logo honors his first son, Nathan. Good job, Jared; that's a pretty creative use of a racing truck!



JACOB BAUDOUX

STERLING HEIGHTS, MI

TEAM ASSOCIATED TC3

Jacob's TC3 has a whole host of hot hop-ups. The car is outfitted with a Trinity Monster stock motor for serious track time, and he straps in an Orion Orbital 2 17-turn motor for fast and furious street racing action. The DuraTrax Intellispeed ESC is powered by a set of Orion batteries, and he uses a Futaba radio system. Jacob has three bodies for the car: the Pro-Line Honda Civic that you see here; a Chevy Corvette and a Lamborghini Murcielago shell. Last, but not least, Jacob set the car up with Medial Pro tires mounted to Hot Works rims.

reader's ride OF THE MONTH

PABLO OLEA, MADRID, SPAIN TEAM ASSOCIATED RC10

Pablo writes, "In Spain, it's difficult to find vintage cars, and American vintage cars are even more difficult to find." The old-school RC10 was sitting new in the box on a shelf in his local hobby shop, and his girlfriend purchased it for roughly \$60! Now it sits on Pablo's shelf as his prized RC possession. We don't blame you Pablo; that's one sweet-looking ride.



WIN A ONE-YEAR SUBSCRIPTION TO RC CAR ACTION MAGAZINE!

Send a sharp, uncluttered, well-exposed color photo of your vehicle (no Polaroids) and a brief description to "Readers' Rides," *RC Car Action*, 100 East Ridge, Ridgefield, CT 06877-4606 USA. If we publish your photo, you'll receive a free, one-year subscription to *RC Car Action* and will be eligible to win the "Reader's Ride of the Year Contest." Write your address and phone number on your letter and on the back of every photo you send. Send email submissions to readersrides@airage.com.



JAKE WEAVER, HILLSBORO, OR TRAXXAS T-MAXX

Jake's T-Maxx has received quite a few hop-ups recently. "I spent all the money that I made this summer on my truck," says Jake. Well, it looks pretty sharp to us! Here's where all of his hard-earned summer money went: an MIP stinger kit; a Pro-Line early-'50s body; Pro-Line paddle tires; RPM Clawz wheels; a Dynamite air filter; a Hitec steering servo; and much more. Nice shot, Jake; that thing is pretty mean looking! It looks like you've spent your money well.

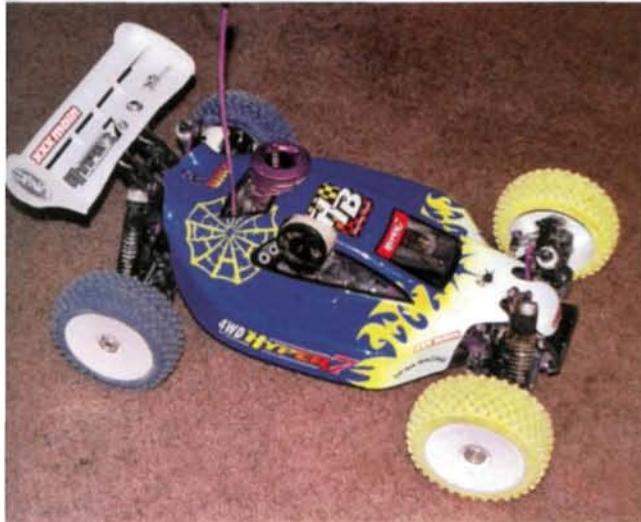


READERS' RIDES

MYRON KING, LOUISVILLE, KY

OFNA HYPER 7

After taking a hiatus from RC, Myron is back in business with his brand-new OFNA Hyper 7 1/8-scale buggy. So how long was he out of the loop? Let's just say that his last RC car was popular in the mid-'80s! His new Hyper 7 is relatively stock except for a larger air filter, a Hitec steering servo, new wheels and a body that he painted himself. According to Myron, this is his first gas car, and he loves it!



GREG HATCHER, SEYMOUR, TN
BOLINK LEGEND

Greg races his highly modified "Outlaw" Bolink Legend at his local track, and according to him, it's a real rocket! His list of mods include: extensive CNC milling to the chassis for weight savings; body posts that lower the body 1 1/2 inch; custom billet adapters that allow wider front tires; Associated steering blocks; Lunsford titanium tie rods; an IRS fiberglass axle; 64-pitch gears; and a functional "ram air" that dumps cool air over the motor. In addition, the car is powered by a Trinity P2k stock motor, a Novak Explorer II ESC and a Trinity battery pack.

The Best Kept Secret in Racing...

REEDY

Reedy "X-cell" GP3300's.

Reedy/Yokomo Gold Peak 3300's have longer run times than most other 3300 Ni-MH cells, and have a great low price that makes them your

BEST choice!

#665 Reedy GP3300
"X-cells", 6-Cells...\$89.99

#664 Reedy GP3300
"X-cells", 4-Cells... \$59.99



Reedy 3300 "Extreme" Sanyos. The newest 3300 Ni-MH cells from Sanyo! The Reedy 3300 "Extreme" cells are cycled, matched, and voltage treated for on-track performance you can really feel.

#660 Reedy 3300 "Extreme" Sanyos, 6-Cells...\$129.99

#659 Reedy 3300 "Extreme" Sanyos, 4-Cells... \$87.99

JOHN YOEST, TIPTON, MO
TAMIYA TXT-1

This sweet-looking monster has been thoroughly modified. Sitting underneath the Pro-Line Cadillac Escalade body is a Novak EVX speed control, two Trinity Madd Maxx motors, a 4-channel Hitec radio system, two 1/4-scale servos (for 4-wheel steering) and 2, 6-cell battery packs. In addition, the truck is set up with a ton of New Era parts that include: cantilever levers and links; lower supports; heavy-duty steering links; front and rear skidplates; a center skidplate; and wheelie bars. Rounding out the package (no pun intended) is a set of Pro-Line 40 Series Masher tires on Pro-Line Outback wheels.



DANIEL MAYO, SNELLVILLE, GA
TEAM ASSOCIATED FACTORY TEAM RC10GT

Daniel's GT looks ready to race. His truck is decked-out with an O.S. .12 CV-R engine that has a 10 ER rotary carb, and he uses Futaba Magnum Junior FM radio with Hitec servos for control. Other mods include: a Trinity aluminum transmission brace; a Team Orion 1100 NiMH receiver pack; an aluminum front shock tower; a Robinson Racing steel idler gear; an MIP 4-N-1 clutch; Boca ball bearings; a complete line of RPM accessories; and Pro-Line tires. It's topped off with a Pro-Line Crowd Pleaser body (masked off with Pactra body masking) that he painted bright blue and chrome. ■

and New **MATCHED** Sport Packs!



Reedy's "Rated-X" Matched sport pack batteries use genuine Panasonic or Sanyo Ni-MH cells that have been given the same cycling, matching, and voltage treating as Reedy's championship-winning racing cells. The batteries are fully assembled in clear tubes so you can see the matching info right on the label of each cell. Don't settle for "mystery" cells in your sport packs... get Reedy's "X-Rated" packs and see the power you've been missing!

REEDY

#698 Reedy "Rated-X" Sport Pack, Sanyo cells

#699 Reedy "Rated-X" Sport Pack, Panasonic cells

**ONLY
\$59.99**

Panasonic

REEDY
RATED
MATCHED Ni-MH CELLS

Visit our Website: www.rc10.com/reedy



WIDER WRENCH

Skinny, stamped turnbuckle wrenches slip off turnbuckle flats very easily. To make wrenching easier, glue or bolt together two wrenches. Now you have a wrench that's twice as thick.

Darren McCloud, Phoenix, AZ

FUNNELED PAINT

To achieve airbrush-like results and reduce overspray, just spray ordinary RC paint into the large opening of a small funnel, and a narrower stream will come out of the small opening. Don't forget to wear a particle mask when you paint.

*Steven Knepp
Wallaceton, PA*



RIM REMINDERS

After tires, inserts and rims are all glued together, there often isn't a way to tell your various combos apart. When you finish putting a set together, write the insert's firmness, the tire's compound and the offset of the rim on each rim. This is a 53-compound tire with a medium insert on a 2mm offset rim.

*Kurt Bodette
Cape May, NJ*

WIN AN OFNA YO-YO & AN RC CAR ACTION SUBSCRIPTION!

Do you have a winning idea? Share it. You could win a 6-month subscription (or an extension of your subscription) and an OFNA Yo-Yo. The monthly "Tip of the Month" winners will all be considered for a grand prize—an OFNA OB4 International RTR electric car kit. Send a sketch or photo to "Pit Tips," *RC Car Action*, 100 East Ridge, Ridgefield, CT 06877-4606 USA. Print your name and address clearly, or you won't win a thing. Sorry; we just can't acknowledge every tip or return the ones we don't use.

READY-MADE BUMP STOP

Effective bump stops can be made from rubber tubing that you can find in most hardware stores. Pick up the correct size for your shock shafts and slide on just enough (usually about $\frac{1}{4}$ inch) so the spring perch is cushioned by it, instead of allowing it to slam into the bottom of the shock body when your truck lands from some big air.

*Tony Wilber
Coldwater, MI*



MAGNETIC MINDER

To avoid "runaway-hardware syndrome," get some magnetic tape, and stick it to the floor under your workbench in an "X" shape from leg to leg. Any steel

E-clips, nuts, bolts and diff balls you might drop will stick to the magnetic tape instead of rolling into oblivion.

William Smack, Warwick, RI



RAZOR SMOOTH TIRES

The excess material produced when tires are molded is called "flashing." The inside bead usually has a thin film of it that can get in the way when you mount the tires. You can use scissors or a hobby knife to remove it, but that can be time-consuming and clumsy. To get a clean cut quickly, use a safety razor with a fresh blade.

Ken Engelmeir
Centerville, MN



BARGAIN BODY WASHERS

To make inexpensive body washers, use the self-adhesive felt pads that go on the bottom of furniture legs. Just pick up the size you need, and use a single hole punch to make openings for the body posts.

Angelo Taormina
Hamilton, NJ



TURNBUCKLE LOCKNUT

To prevent your turnbuckles from changing length, thread a nut onto the turnbuckle before you install the rod end. When you have the rod end where you want it, just tighten up the nut against it. This will hold everything in place despite the vibration a nitro engine produces.

Todd Boeck
Seguin, TX



TRIM THE TUBING

Team Losi tire glue comes with a short section of tiny tubing taped to its container. Insert this tubing about $\frac{1}{8}$ inch into the clean tip of the glue bottle, then trim the tubing so no more than $\frac{1}{4}$ inch extends beyond the bottle tip. The short tip gives you better control with the glue. Save the excess you trimmed away to use later. Trimming the tubing after you've inserted it into the glue bottle prevents you from gluing the tips of your fingers together, or to the glue bottle.

Jim Lisi
Tampa, FL



Tip of the Month

CLOTHESPIN BALL-CUP HOLDER

A spring-type clothespin works well as a ball-cup holder. The wood won't mar the plastic, and the clothespin gives you much more leverage. If necessary, you can use a hobby knife to enlarge the opening in the clothespin's jaws to fit your ball cups.

Tom Canter
Madison, CT

"Pit Tips" are submitted by readers and are screened for functionality, feasibility and safety but are not tested by Radio Control Car Action. Radio Control Car Action and the submitting authors are not responsible for personal injury or damage to models or tools resulting from readers' use of "Pit Tips."

TRROUBLESHOOTING

YOU'VE GOT PROBLEMS? WE'VE GOT FIRES.

BY STEVE POND

► NEED HELP? Send your "Troubleshooting" questions and comments to troubleshooting@airage.com, or mail them to "Troubleshooting," c/o RC Car Action, 100 East Ridge, Ridgefield, CT 06877-4606 USA.

Q MODIFIED MALADY

I just installed a new modified motor in my Tamiya car so I'd be able to beat my friend in a race. The place where I bought my motor told me I needed a new speed controller to go with the modified motor, so I got that, too. The car runs much faster than when it was stock, but I had to resolder the wires going to the motor brushes twice. The car worked well for a while, but the last two times I drove it, the wires came loose. Am I doing something wrong? [email]

Ed Smith

A The 60/40 solder melts at 370 degrees, so you must be doing something to get the motor so smokin' hot that it melts the solder that holds the brush shunts on the endbell. That heat is almost certainly the result of your overgearing the modified motor.

A 10-turn motor makes roughly three times more power and rpm than the standard closed-endbell motor included with most Tamiya cars. The amperage requirements for a modified motor are considerable; when combined with an excessively low gear ratio (high gearing), there's almost no way to avoid tremendous overheating and damage to the new speed control and motor. You didn't specify the type of car you own, so I don't know whether you can change spur gears, but I would start by installing the smallest usable pinion gear. If that doesn't reduce motor temps enough and you don't have an option to make further gear-ratio changes, you should also set the motor timing to zero to reduce rpm.



Solder typically melts at around 370 degrees Fahrenheit. If the brush shunt comes unsoldered, it means that the motor is severely overgeared, or something else is creating enough drag in the drive train to overheat the motor to a temperature that's high enough to liquefy solder.

REAL PERFORMANCE PRODUCTS!

T-Maxx/2.5-Maxx Steel Top Shaft



This precision machined **hardened** steel top shaft will fit all T-Maxx. Includes oversize ball bearing. RRP 8525

T-Maxx/2.5-Maxx Forward Primary and Reverse Gears



This kit contains a precision machined **hardened** steel primary forward gear, a **hardened** aluminum reverse gear and pin. RRP 8521

T-Maxx/2.5-Maxx Primary Reverse Gear



This gear is precision machined from solid aluminum and **hardened**. Includes pin. RRP 8522

NEW

T-Maxx/2.5-Maxx FORWARD ONLY Steel Gear Kit



This kit contains a 26T **hardened** steel output gear, a forward drive hub adaptor, steel spacer and Pin. RRP 8586. Hardened aluminum version RRP 8585.

T-Maxx/2.5-Maxx Hardened Forward Primary Gear



Precision machined from solid steel and then **hardened**. RRP 8529
Hardened aluminum version RRP 8528.

NEW

www.robinsonracing.com

MAKE NO COMPROMISES!

T/E-Maxx/2.5-Maxx Accessory Spur



A wide range of spurs fit our Double-Disc Slipper Kits. Choose from machined Super-Tough plastic spurs in 66, 68, 70, 72, 74 and 76T sizes, RRP 82XX, or CNC machined steel spurs available in 65, 72 and 76T sizes, RRP 83XX. Small Clutch Plate/Gear Adaptor fits 65 thru 70T spurs. Large Clutch Plate/Gear Adaptor fits 72 thru 76T spurs.

T-Maxx/2.5-Maxx Lightened Spur And Double-Disc™ Slipper Kit



RRP's NEW line of Lightened Spur and Double-Disc Slipper Kits for Traxxas Nitro and T/E-Maxx/2.5-Maxx trucks are designed to improve performance and increase reliability. This combo incorporates a machined steel or Super-Tough plastic spur, a Vented Aluminum Clutch-Plate/Gear Adaptor, 2 Slipper Pads and 2 Plates to deliver the adjustability you need and the increased performance that you demand. Complete Slipper Kits are available in the following sizes: RRP 8166 Slipper Kit with 66T Super-Tough plastic spur (Stock Size) for E-Maxx RRP 8172 Slipper Kit with 72T Super-Tough plastic spur for Traxxas Nitro RRP 8465 Slipper Kit with 65T Steel Spur for Traxxas Nitro RRP 8472 Slipper Kit with 72T Steel Spur (Stock Size) for T-Maxx Spurs, Clutch-Plate/Gear Adaptor and Slipper Pads also sold separately.

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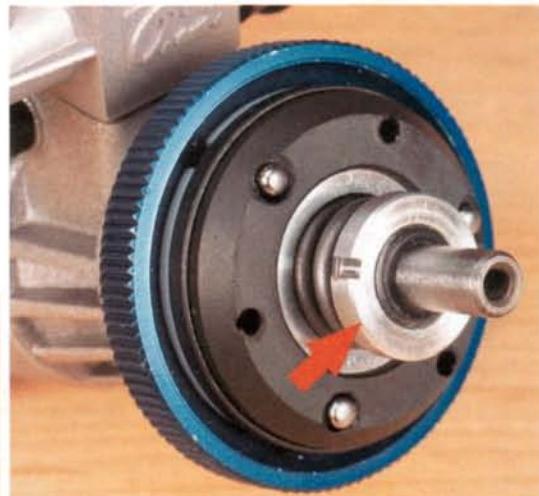
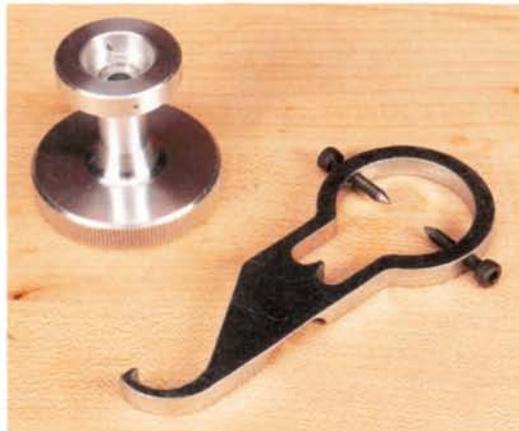
Q

CENTAX ATTACK

I just installed a Centax clutch in my Nitro TC3, and it isn't working the way I hoped it would, even though I followed the instructions. It takes so much longer to engage than the standard clutch that it's hard to control the car at low speeds. Nobody else has this clutch at my track, so I'm not sure what to do. Any ideas? [email] Robert Miller

A

Check the adjustment of the coil spring inside the clutch. It's installed over the crankshaft and is held in place with a threaded adjuster. The position of this adjuster is what determines the rpm at which your clutch will engage. Turn the adjuster counterclockwise to reduce tension on the spring and cause the clutch to engage earlier; turn it clockwise to increase spring tension and delay clutch engagement. I speculate that the clutch-spring tension is excessive and delays the engagement of the clutch until the engine has reached higher rpm. Loosen spring tension by turning the adjuster counterclockwise until the clutch engages at the rpm you want.



Above: typical Centax-style clutches have a threaded retainer such as the aluminum one shown here. Turn this retainer clockwise to delay clutch engagement until higher rpm have been reached; turn it counterclockwise to make the clutch engage at lower rpm. **Left:** use the Mugen tool on the left to adjust a Centax-type clutch's spring retainer. OFNA makes a similar tool (right) that's also useful for installing and removing threaded clutch-bell gears.

T/E-Maxx/2.5-Maxx Steel Diff Gear Set



T/E-Maxx/2.5-Maxx differential gear set, includes: 1 beveled pinion gear, 1 beveled spur gear, 4 re-usable stainless steel phillips head screws, 1 tube Associated Black Grease, and a shim kit for spider gears with 10.003" shims. 2 sets needed per truck. RRP 8590

DON'T SETTLE FOR SECOND!



T-Maxx Vented Flywheels



Aluminum vented flywheels move air over clutch bell, improving performance and cooling. RRP 8551 Blue, RRP 8550 Natural Silver
NEW 2.5-Maxx Vented Flywheel, Blue Only RRP 8552.

T/E-Maxx/2.5-Maxx Replacement Pinion



This precision machined steel pinion fits RRP 8590 Diff Gear. RRP 8591

T-Maxx/2.5-Maxx Aluminum High Performance Brake Kit



New, lightweight aluminum high performance brake kit, includes bigger, more aggressive brake pads and steel backing plates. One piece vented rotor minimizes side-to-side wobble. Also fits newer T-Maxx. RRP 8562 Older style half shafts use Brake Kit RRP 8560.

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T-Maxx/2.5-Maxx Hardened Steel Clutchbells



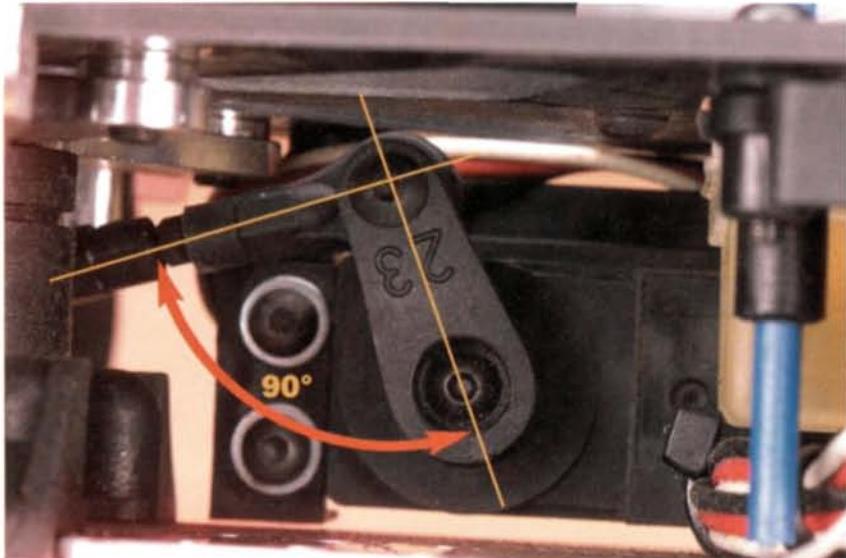
CNC Machined from solid steel these bells are built to last. They take the 5x11 bearing (NOT included). Available in 19T, RRP 8119, 20T RRP 8120, 21T RRP 8121 and 23T RRP 8123.

Groundhog Day

Q STEERING VEERING

My Serpent 950 steers better to the left than to the right. I've checked all the radio settings to make sure there aren't any odd endpoint settings, and I've centered the steering servo twice to make sure that isn't the problem. It doesn't seem to matter what I do; I can't get the car to turn as well to the right as it does to the left. What gives? [email]

Matt Thomas



A I won't bog you down with a boring geometry lesson, but you'll always have a steering imbalance if the servo horn isn't properly aligned with the steering linkage.

The Serpent 950's steering servo is mounted horizontally between the upper and lower decks. The linkage rod that connects the servo horn to the steering bellcrank is installed at such an angle that the angle of the servo horn must be adjusted when the servo is in the neutral position. The steering-servo linkage should always be at 90 degrees to the servo horn when the steering servo is in the neutral position. I assume you installed the servo horn so that it points straight upward. Turn on your radio; set the trims and subtrims to zero, and then install the servo horn on the servo so it's at 90 degrees to the linkage rod. Then adjust the length of the steering linkage rod so the steering bellcrank is centered, and then adjust the steering linkage rods to point both wheels straight ahead. That should solve your problem.

Whenever the steering linkage rod has to be angled upward or downward to attach it to the steering-servo horn, its length and the steering-servo's neutral point should be set so that the linkage and the servo horn are at 90 degrees to each other when in the neutral position.

RC10-GT Steel Combo

Precision machined from solid steel, then hardened, this 65T spur and 15T bell combo will last and last. RRP 2365

RC10-GT Hardened Steel Idler Gear

Cut from solid steel stock, this RC10-GT gear is lightened and hardened for super quiet precision and extra long life. Black tranny grease included. RRP 2213

Associated Titanium Stealth Top Shaft

CNC Machined from solid titanium, this super hard, super light top shaft will fit any Stealth transmission. RRP 1512.

RC-10GT Hardened Steel Clutchbells

These steel Clutch Bells are CNC machined from solid steel then the teeth are machined on. This makes the part stronger with less gear "run out". Available in 14T thru 20T, 22T and 24T. RRP 22XX

www.robinsonracing.com

RC-10GT 32 Pitch Spurs

Precision machined from heat-resistant, super tough plastic, these spurs mesh flawlessly with our Clutchbells. Available in 63T thru 67T, RRP 2263 - RRP 2267.

Hardened Diff Gear

Hard anodized, precision CNC machined aluminum diff gear. RRP 1513 RC10-GT

DON'T SETTLE FOR SECOND!

TC3 Ultra 48 Pitch Spurs

Precision machined from heat-resistant plastic, these spurs mesh flawlessly with our pinions. Available in even numbers from 70T thru 80T, RRP 1670 - RRP 1680.

R/R

TOOLBOX

Rogue Element Shock-Shaft Pliers

These unique pliers are designed specifically for the proper assembly and maintenance of shock absorbers. Constructed of 6061 T6 aluminum, the shock-shaft pliers are made of a softer material than the shock shafts they're designed to hold, so there's no chance that they'll scratch the shock shafts. These precision-made pliers can grip a shock shaft firmly in its V-shaped jaws to allow the easy installation or removal of even the most stubborn shock ends. The pliers' strong stainless-steel pivot is close to the jaws to provide superior gripping strength for all popular sizes of shock shafts. The tool also comes in a protective leather sheath.

Item no.—TSSP01SIL; \$32.99.

Distributed by Rogue Elements (719) 821-1526; rogueelementcomponents.com.



FOOL'S GOLD?

I have a Losi Triple-XT Matt Francis Edition truck, which includes gold-color shock shafts that are supposed to be so much better than the standard shocks. I've run the truck for about a month, and the shafts' gold coating is already worn away. Aren't these shock shafts supposed to last longer? If they are, is there anything I can do to avoid this wear and tear? [email]

Steve Pape

The shock shafts' gold coating is more durable than raw steel, but it's not invulnerable. It's called titanium nitride and it's used extensively as a hard coating for steel products such as drill bits. It's about 30 percent harder than even the good steel used to form most shock shafts, so it's certainly more resistant to wear than the underlying steel. Your best defense against accelerated wear is to clean dirt off the shafts and the shock-seal areas after every run. You can also take the extra step of using a shock "boot" over the shocks to shield the shaft and seal it against dirt. Pick up some long, skinny balloons from a party supply store; snip the closed end off the balloons, and slide one over each shock. This will keep the shock shafts cleaner, and they will consequently last longer. ■



Top-quality shock shafts have a very durable, titanium-nitride coating, but it doesn't last forever. Dirt and debris collect around the shock seals, and that accelerates shock-shaft wear. Properly maintained shock shafts will obviously last longer.

HPI Savage 21 Nitro Steel Combo



This new 52 tooth Spur and 14 tooth Clutch Bell are CNC machined from solid steel and then hardened for unmatched performance and durability. RRP 7052

NEW

HPI Savage 21 Nitro Vented Flywheel



Aluminum vented flywheels move air over clutch bell, improving performance and cooling. RRP 7000

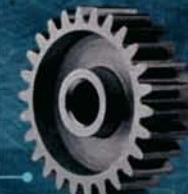
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Electric Car And Truck Pinions:

48P Absolute Series Pinions



Super hard, lightened and cut with unmatched precision. Great with any spur, but with an Absolute spur, even on/off noise is gone! Available in 48P in 16T thru 28T sizes. RRP 1416 - RRP 1428.

48P / 64P SuperLite Aluminum Pinions



They're lightened, hard coated and precision cut. Available in 48P in 16T thru 28T, and 64P in 24T thru 38T. RRP 30XX (48P) and RRP 31XX (64P). Only \$5.25

48P Hard Nickel Plated Steel Pinions

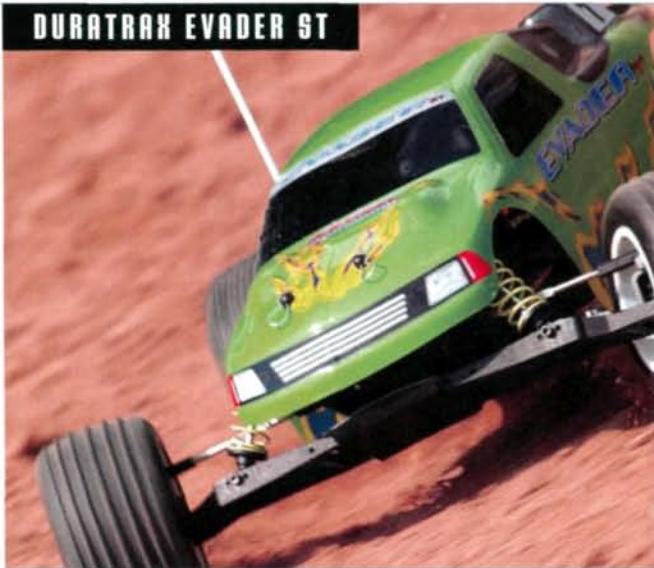
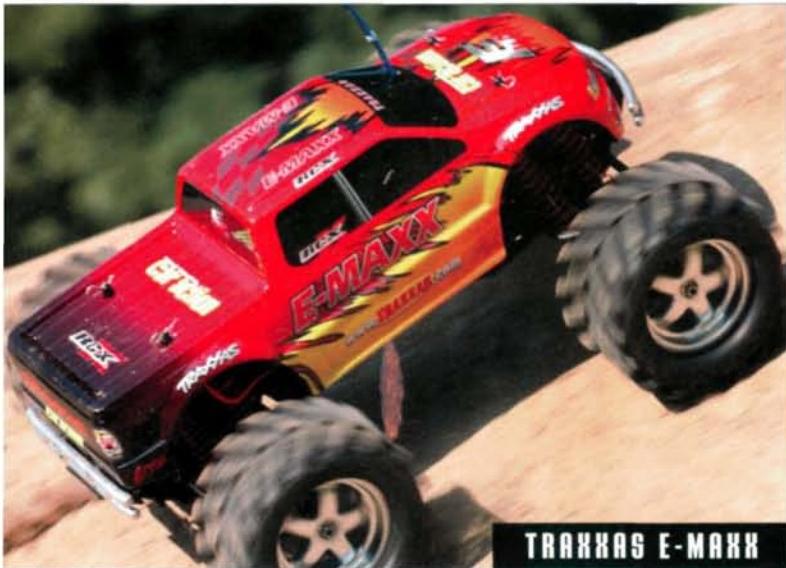


These precision cut gears have an extremely hard coating that makes them really last. Available in 12T thru 35T. RRP 1012 - RRP 1035

www.robinsonracing.com

6 Hot RTRs for

LOW DOUGH, ALL GO!



If you had to cite one factor as the major reason for RC's continued growth and success, it would be the huge influx of affordable, high-performance ready-to-runs.

RTRs are pulling in more new drivers than ever before, but these vehicles aren't just for first-timers. Today's factory-built rides are genuine high-performance machines, not stripped-down beginner-mobiles. The only real problem is picking one! To help you out, we picked six electric- and nitro-powered favorites in the three most popular flavors: monster truck, stadium truck and touring car.

by the
RC Car Action team

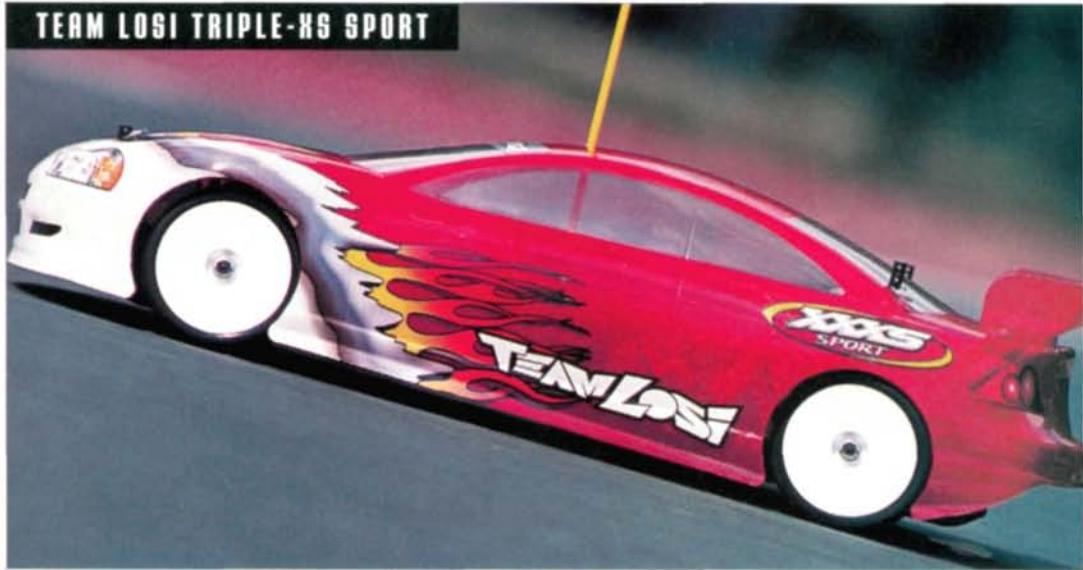
TEAM ASSOCIATED
NITRO TC3



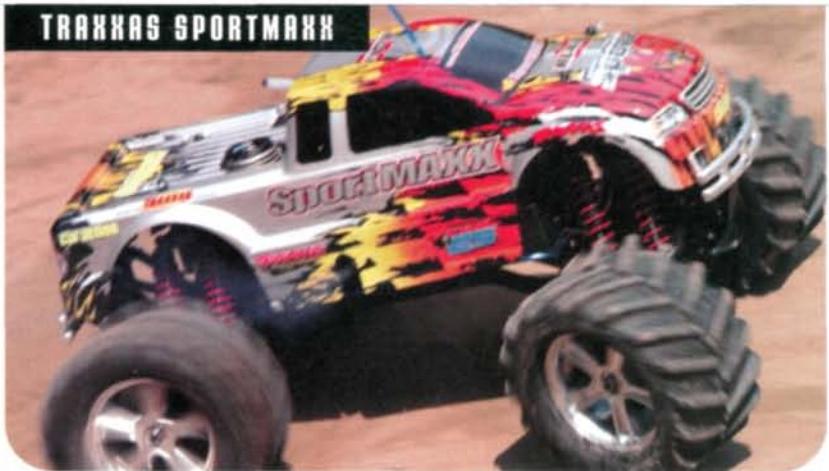
TEAM ASSOCIATED NITRO TCS • TRAXXAS SPORTMAXX • TEAM LOSI TRIPLE-XS SPORT



TEAM LOSI TRIPLE-XS SPORT



TRAXXAS SPORTMAXX



6 HOT RTRs FOR UNDER \$350



QUICK SPECS

PRICE: \$330 (price varies with dealer)
TOP SPEED: 22.29mph
WHEELBASE: 12 in. (305mm)
OVERALL LENGTH: 15.75 in.
TRANSMITTER: Traxxas Qualifier 3-channel
SERVO: Traxxas 2055 steering servo
MOTORS: Traxxas Titan 550
SPEED CONTROL: Traxxas/Novak EVX



TRAXXAS E-MAXX

Why we like it: it whips up on every other electric monster truck on the market, that's why. We picked it as our truck of the year back in 2001, and it's still kicking butt today. The twin 550 motor setup is good for more than 22mph, and the shift-on-the-fly 2-speed tranny is very cool. The truck looks and works great completely stock, but since it shares its suspension with the T-Maxx, there's a huge supply of hop-up and dress-up parts out there. You'd be hard-pressed to find a better electric monster truck out there for any price—that the E-Maxx rings in at just \$330 ready-to-run just means you don't have to be rich to be fast.

Save up for: battery packs

The E-Maxx eats 6-cell packs two at a time, so unless you don't mind a lot of downtime between runs, be sure to get yourself two or three pairs of packs. You'll also need a charger; we like the Dynamite Dual-E, which is designed to charge a pair of stick packs simultaneously—just what you need for an E-Maxx!



The beefy suspension pieces and long-travel coil-overs are straight out of the T-Maxx parts bin. That combination of durability and upgrade potential made the E-Maxx a shoo-in for this list.



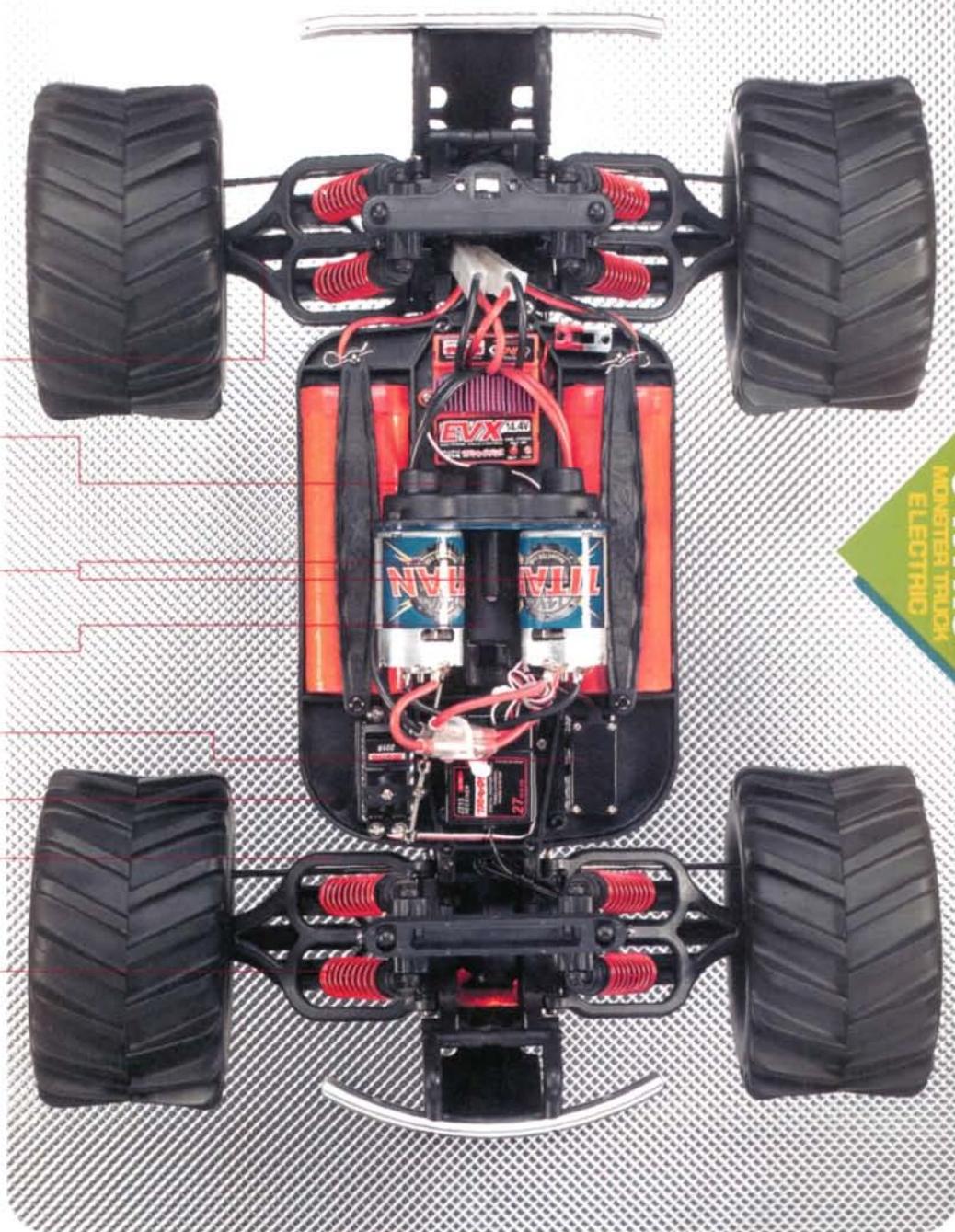
Dual 550 motors spin a single, slipper-clutch-equipped spur gear.



The Novak-built EVX speed control is the only dual-motor, 12-cell unit in RC. It's tough!

you'll need

- Two 6-cell battery packs
- Charger
- Tire glue
- 8 AA batteries for transmitter



other top picks:

- Traxxas Stampede—\$170 (price varies with dealer)

**QUICK SPECS**

PRICE \$330 (price varies with dealer)
TOP SPEED: 30.4mph
WHEELBASE: 12 in. (305mm)
OVERALL LENGTH: 19.125 in. (486mm)
TRANSMITTER: Traxxas Qualifier 3-channel radio
SERVOS: Traxxas 2018 high-torque steering; 2055 throttle
ENGINE: Traxxas TRX 2.5 rear exhaust



TRAXXAS SPORTMAXX

Why we like it: basically, the SportMaxx is a Traxxas T-Maxx (the *Car Action* 2003 Truck of the Year, by the way) minus the T's z-speed tranny, reverse mechanism and 4WD. But what you *do* get with the SportMaxx is much more important than what you don't get. First and foremost, it's a Maxx, so you get all the super-suspension action and durability the series is known for, and the upgrade potential is through the roof. That includes upgrades straight from Traxxas, including kits to give the SportMaxx 4WD, reverse and z-speed capability—in other words, a T-Maxx! But the SportMaxx's best feature is Traxxas' radical TRX 2.5 powerhouse engine. It's one of the best we've tested, and it's the same mill as is found in the top-of-the-line T-Maxx.

Save up for: charger and stick pack

You'll need to get a stick pack to power the SportMaxx's onboard electric starter and a charger to juice up the pack. But you don't need fancy stuff; the cheapest battery (about \$15) and most basic charger (\$30 or so) are all you need.



The Maxx's TRX 2.5 engine is one of the best available, and it gives up nothing to "sport" big-block engines.



Here's a look at the flip-side of the SportMaxx. The single disc brake is hung off one end of the gearbox, and the telescoping rear drive shaft sprouts out the other.



It's déjà vu all over again. Electric or nitro, all the latest Traxxas monsters get the same fully-adjustable, eight-shock WideMaxx suspension.

you'll need

- 20%-nitro fuel
- 12 AA batteries
- Tire glue
- 6-cell 7.2V stick-type battery pack
- Charger for starter battery

TELESCOPING
UNIVERSAL-JOINT AXLES

TRX 2.5 ENGINE

EZ-START 2 ELECTRIC
STARTER

125CC FUEL TANK

3MM ALUMINUM CHASSIS

LARGE-DIAMETER
FIBER DISC BRAKE

HIGH-TORQUE
STEERING SERVO

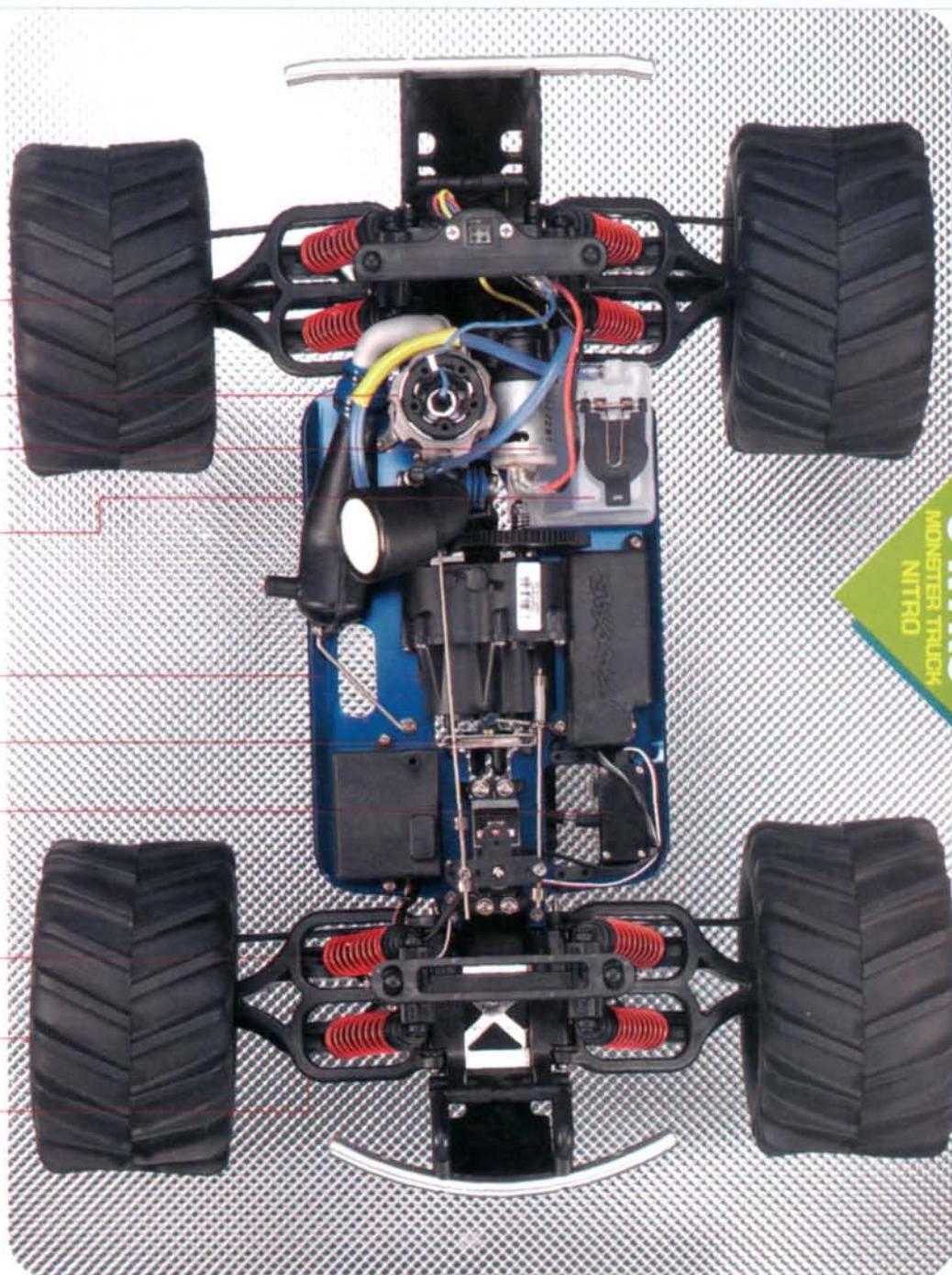
BIG-BORE OIL-FILLED SHOCKS

CHROME 5-SPOKE RIMS

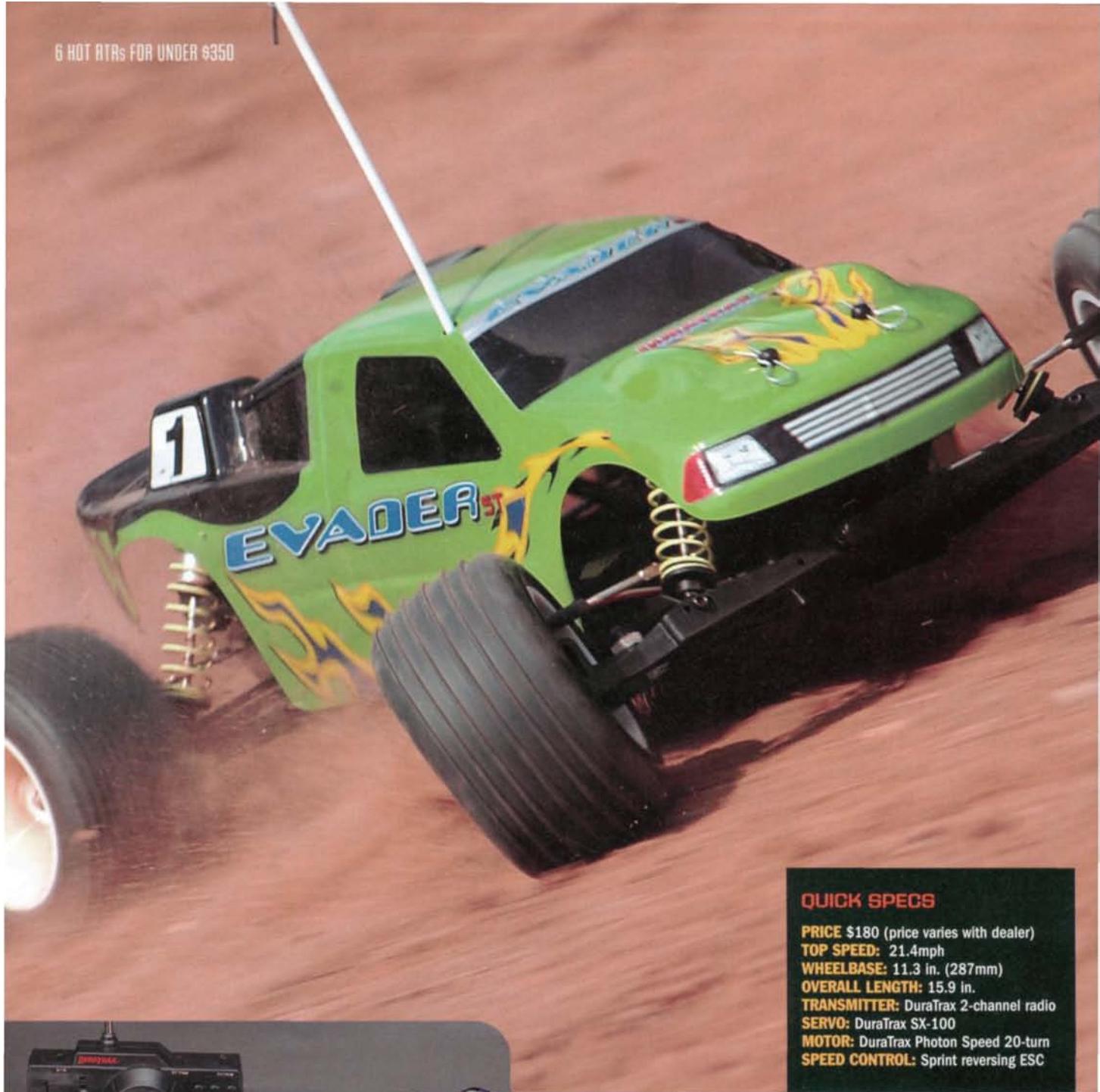
ADJUSTABLE "WIDEMAXX"
PIVOT-BALL SUSPENSION

other top picks:

- Traxxas Nitro Stampede—\$300
- DuraTrax Maximum MT—\$260
(prices vary with dealer)



6 HOT RTRs FOR UNDER \$350



QUICK SPECS

PRICE: \$180 (price varies with dealer)
TOP SPEED: 21.4mph
WHEELBASE: 11.3 in. (287mm)
OVERALL LENGTH: 15.9 in.
TRANSMITTER: DuraTrax 2-channel radio
SERVO: DuraTrax SX-100
MOTOR: DuraTrax Photon Speed 20-turn
SPEED CONTROL: Sprint reversing ESC

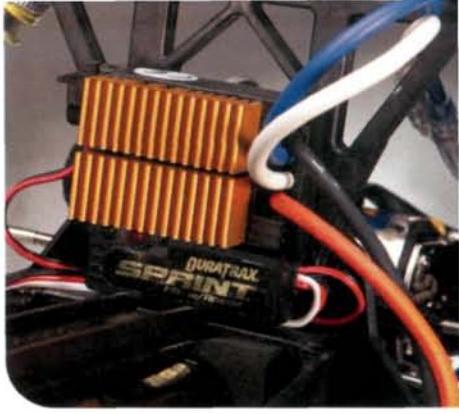
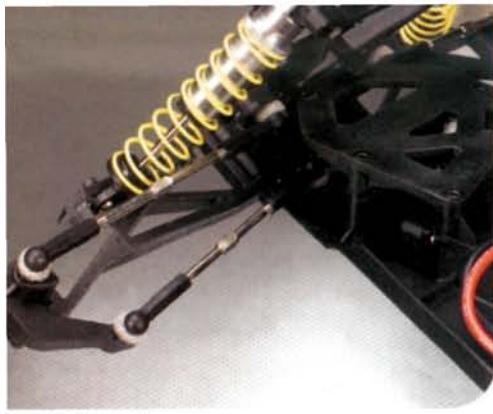


DURATRAX EVADER ST

Why we like it: hmm, let's see: the Evader has race-ready features such as threaded body aluminum shocks, a ball diff, a slipper clutch and Futaba-built radio gear—all for \$180. Any questions? DuraTrax has set the bar for RTR electric stadium trucks incredibly high with the Evader ST. The truck even comes with AA alkalines for the radio and a setup video. It's tough, too; DuraTrax is so confident in the Evader's durability that it backs almost every plastic component with its "you break it, we replace it" Stress Tech Warranty.

Save up for: battery and a charger

You'll need to supply your own, but with the bucks you save on the ST, you can afford a killer charger and enough batteries to run all day.



The front suspension uses steel turnbuckles for camber links and tie rods—easy to adjust and plenty tough. The kingpin for the steering arm doubles as the ball stud for the steering arm.

A slipper clutch is standard. It helps tune power delivery and protects the transmission gears.

DuraTrax's own Sprint reversing ESC provides trouble-free throttle control.

you'll need

- 6-cell battery pack
- Charger

20-TURN PHOTON SPEED MOTOR

SLIPPER CLUTCH

3-GEAR TRANSMISSION WITH BALL DIFFERENTIAL

PRO-LINE BOW TIE TIRES

UNIVERSAL-JOINT DRIVE AXLES

THREADED ALUMINUM SHOCKS

FUTABA-BUILT RADIO GEAR

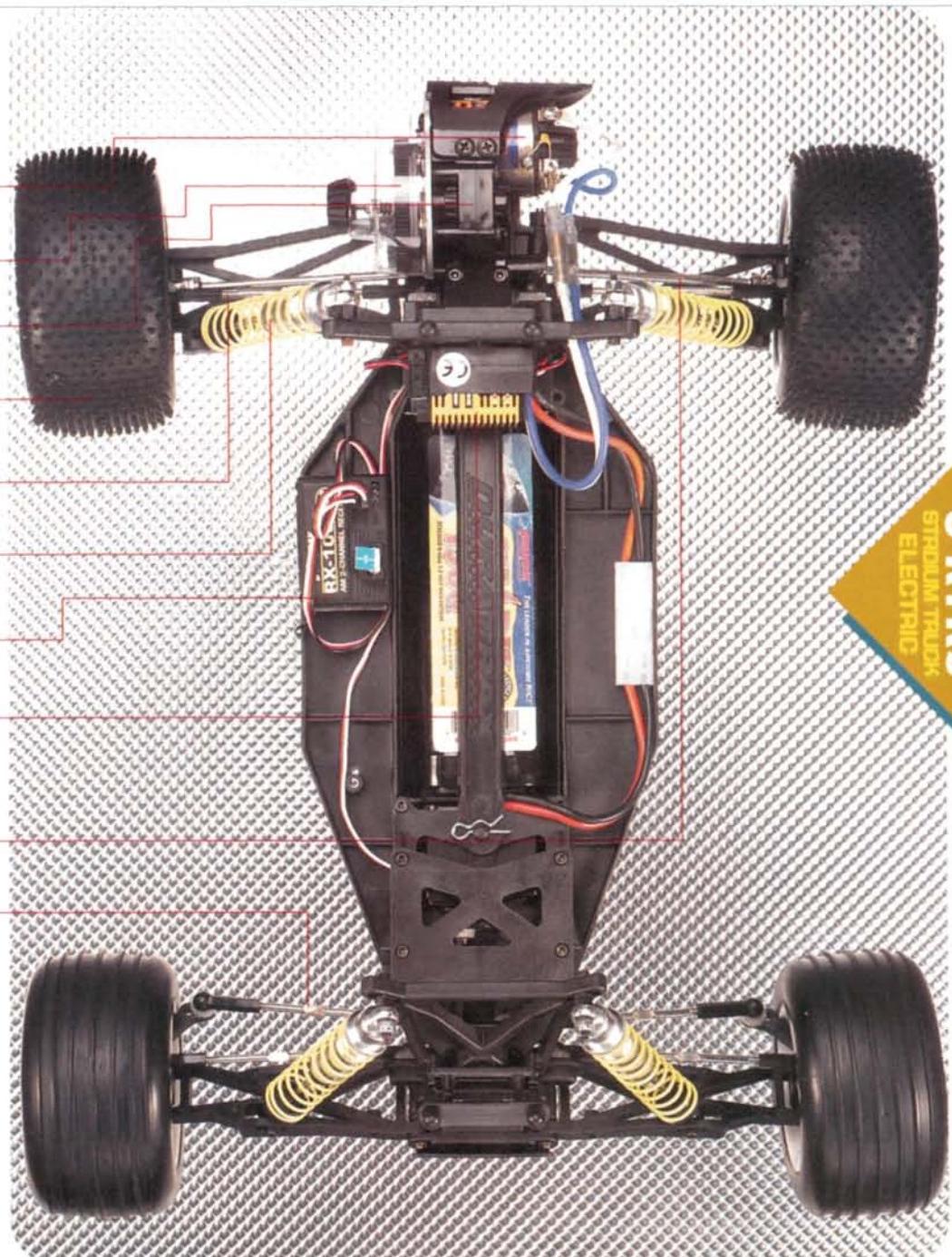
DURATRAX SPRINT REVERSING SPEED CONTROL

UNIVERSAL-JOINT DRIVESHAFTS

HEAVY-DUTY STEEL TURNBUCKLES

other top picks:

- Associated RC10T3 RTR—\$210
- Kyosho Ultima ST ReadySet—\$150
- Traxxas Rustler RTR—\$160 (prices vary with dealer)





QUICK SPECS

PRICE: \$260 (price varies with dealer)
TOP SPEED: 46mph
WHEELBASE: 11.5 in. (292mm)
OVERALL LENGTH: 17 $\frac{5}{8}$ in. (447mm)
TRANSMITTER: Hitec Lynx Sport
SERVOS: Hitec HS 311
ENGINE: XTM .18 rear exhaust



XTM X-CELLERATOR

Why we like it: XTM Racing's X-Cellerator is a 2WD stadium truck that bridges the gap between racing kits and ready-to-run play trucks. First timers will like that the truck is completely built and ready for action. Racers will appreciate the truck's long list of race-worthy features that include threaded aluminum shocks, a ball differential, turnbuckle camber links and a powerhouse XTM .18 engine. The versatile X-Cellerator shines on many surfaces (including technical racetracks) and hits speeds in excess of 45mph. Really!

Save up for: tires

The X-Cellerator's stock tires are great for bashing, but are not as race-capable as the rest of the truck. If you're thinking about hitting the track, switch to a set of Pro-Line, Team Losi or TRC Off-Road sneakers. You can mount them to XTM wheels or any hoops designed to fit Losi Triple-X truck—they'll fit the X-Cellerator perfectly.



A dual-pad slipper clutch protects the transmission, and you can also see the disc brake peeking out from behind the gears.



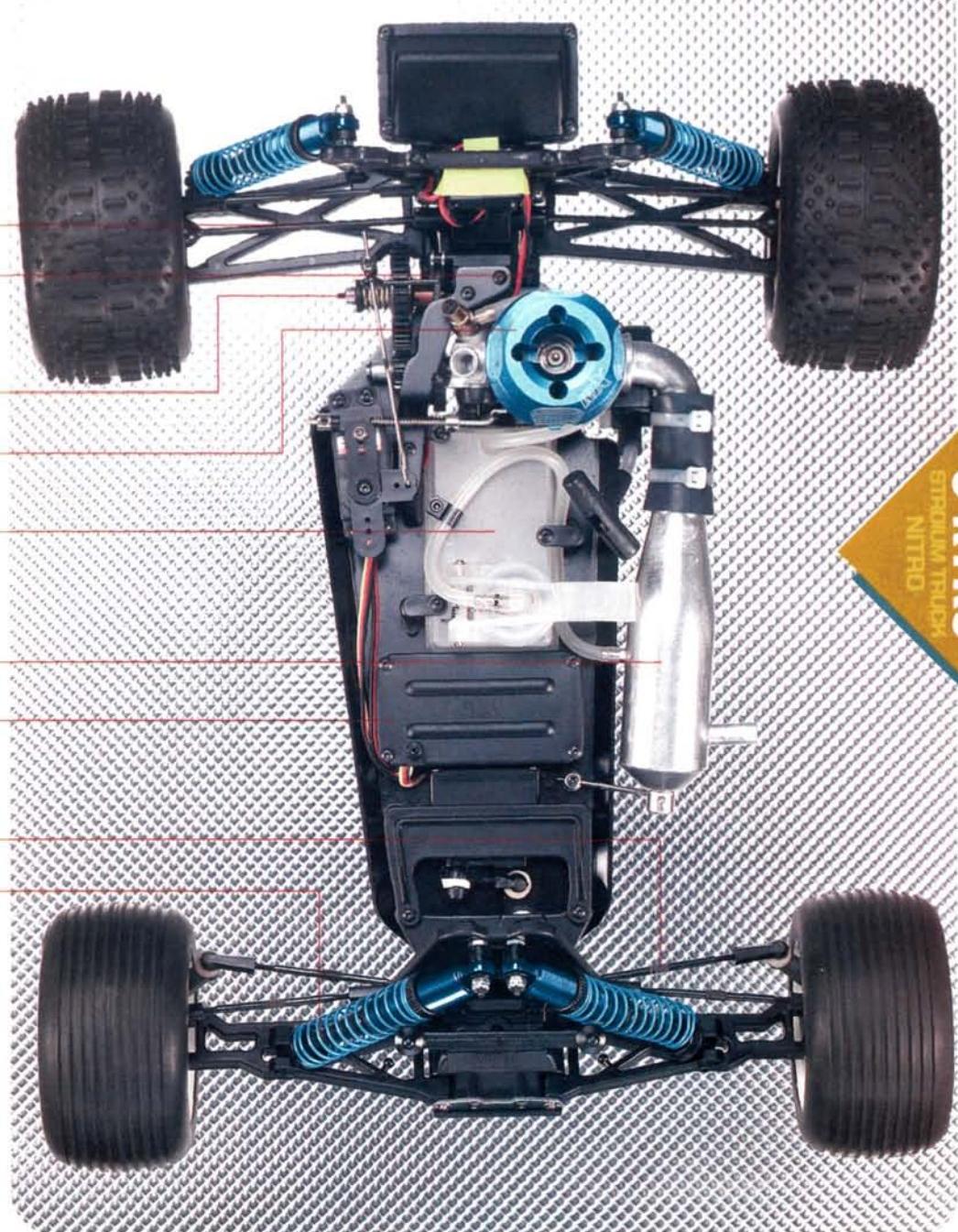
XTM's .18 engine is a screamer, and it looks the part with this over-size cooling head.



Preload and ride height adjustments are a breeze with the aluminum-body threaded shocks on the X-Cellerator. The extra-long front arms keep the truck planted to give it very desirable stability.

you'll need

- Fuel
- Fuel filler bottle
- 12 AA batteries
- Glow igniter



other top picks:

- Team Losi Triple-XNT RTR-\$350
- Team Associated GT-Plus RTR-\$295
- DuraTrax Nitro Eader ST-\$270
(prices vary with dealer)

I Think small!

If you'd like to get into RC for less than \$200 and would like the option of running your car in the living room, check out the mini and micro scene. At less than 10 inches long, minis and micros can go where "big" 1/10 cars can't (like between the legs of a coffee table, for example). They're tiny, but they're still full-function, high-performance RC machines. Here are our favorites.



10" 11" 12" 13" 14" 15" 16" 17" 18" 19"

HPI MICRO RS4 RTR

HPI's popular 1/18-scale Micro RS4 features full-time 4WD and accepts alkaline batteries as well as rechargeable packs. You also get a full set of ball bearings, your choice of realistic bodies, front independent suspension and rubber racing slicks, and all of the electronics are included and installed all for about \$200. All you need to complete the Micro RS4 RTR are transmitter batteries and 4 AAs to power the car.



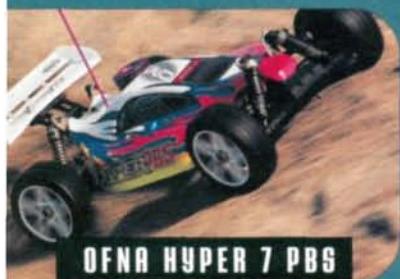
10" 11" 12" 13" 14" 15" 16"

KYOSHO MINI-Z

Mini-Zs are perfect for indoor playing. The 1/28-scale cars come in dozens of different scale body shells. Kyosho also offers the Overland, an off-road Z-car that crawls over obstacles with ease. Other than 8 AA batteries (for the transmitter) and 4 AAAs (for the car itself), Mini-Zs are ready to rock right out of their box and perform just like the bigger 1/10-scale cars, complete with proportional steering and throttle control. Price varies with body style, \$100 to \$150.

What about big buggies?

No 1/8-scale buggies made our list simply because they fall beyond the \$350 price cutoff. But that doesn't mean there aren't lots of great choices out there. You just have to be willing to part with more bank! Here's a quick look at our faves.



OFNA HYPER 7 PBS

OFNA Hyper 7 PBS

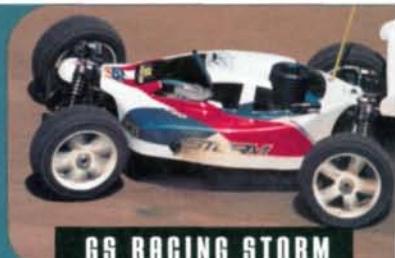
OFNA is unquestionably the king of RTR buggies; at last count, the Big O offered no fewer than six models! The Hyper 7 PBS stands out with its screaming, 8-port Hyper .21 bump-start engine, full pivot-ball suspension, eight-gear diffs, universal-joint front axles and aluminum rear dogbones.

Since it's an RTR, you also get an OFNA fuel bottle and glow starter and an Airtronics radio system. But here's the real kicker: a starter box is included, too! This bumps the price up to about \$550, but if you price all the included stuff separately, you'll see you're coming out way ahead. And if you want to save some cash, you can get the PBS minus the starter box, or opt for the standard pull-start Hyper 7 (for about \$460).

GS Racing Storm RTR

The Storm has lots of nice features, which we'll get to, but its best one is the included transmitter. It's a JR Racing XR3—a 3-channel unit with model memory, adjustable throttle and steering endpoints, dual-rate steering and, best of all, FM operation. FM radios offer superior range and glitch

resistance; that's important for big buggies. And, as we said, the Storm itself is full of good stuff, too. It has a steel spur gear, a high-torque steering servo, helical-cut ring and pinion gears and sealed diffs. For first-time buggy racers, the Storm RTR is a tough combo to beat. It's also not cheap at about \$550, but it's still a great value thanks to its included FM radio system.

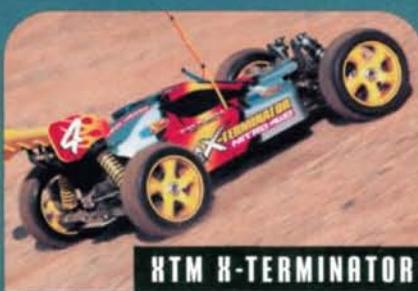


GS RACING STORM

XTM Racing X-Terminator

The X-Terminator really won us over during the production of the RC eXplosion DVD. During filming, the X-Terminator was the most trouble-free buggy of the production group and withstood all the don't-try-this-at-home abuse we threw at it. Its super-size .247 engine is strong and reliable, and the usual big-buggy features (aluminum shocks, enclosed receiver and battery boxes, 3mm chassis) are matched with bonus items such as a steel spur gear, a heavy-duty Hitec HS-625MG metal-gear servo and a large-

capacity external fuel filter. The only noticeable nod to cost savings is the no-frills (but trusty) Hitec Lynx Sport transmitter, which helps the X-Terminators to land inexpensively (relatively speaking) on dealers' shelves at \$420.



XTM X-TERMINATOR

6 HOT RTRs FOR UNDER \$350



QUICK SPECS

PRICE: \$280 (price varies with dealer)
TOP SPEED: 21.5mph
WHEELBASE: 10.13 in. (257mm)
OVERALL LENGTH: 16 in. (406mm)
TRANSMITTER: JR XR21
SERVO: JR Z-590
MOTOR: 19-turn
SPEED CONTROL: GM Racing V3R



TEAM LOSI TRIPLE-XS SPORT

Why we like it: team Losi's RTR strategy is simple: start with the proven racing kit, change nothing, build it, then finish it off with a JR Racing computer radio and a high-quality GM Racing ESC. The plan works for the Triple-XNT Sport nitro truck (*Car Action*'s 2002 Truck of the Year) and the Triple-XT Sport electric, and it's just as effective for the Triple-XS tourer. All the best kit stuff is here: easy-access ball differentials, hard-anodized aluminum shocks, single-belt drive—all the racin' stuff.

Save up for: more batteries

More batteries equals more drive time. With three battery packs, you can run one while you keep another charged pack on deck and a third on the charger. Keep them rotating, and you can run nearly nonstop.



The RTR version of the Triple-XS has all the features of the kit car. It comes with aluminum shocks, turnbuckle camber links, MIP CVDs and all the adjustability you'll ever need for racing.

GM Racing supplies the Sport's V3R reversing speed control. It can handle mod motors down to 15 turns, should you care to speed up your Sport even more.

The combined kingpin/ball-stud suspension geometry on the Triple-XS gives it race-ready handling.

you'll need

- Battery charger
- 8 AA batteries
- Tire glue

EASY-ACCESS
BALL DIFFERENTIALS

HARD-ANODIZED,
BOTTOM-FILLED SHOCKS

GENUINE MIP CVD
DRIVE AXLES

GM RACING V3R SPEED
CONTROL

SINGLE-BELT DRIVE TRAIN

19-TURN MOTOR

JR Z-590 HI-TORQUE
STEERING SERVO

JR XR3 FM RADIO
SYSTEM

FULLY ADJUSTABLE
SUSPENSION

FOAM BUMPER

other top picks:

- Team Associated TC3 RTR-\$240
- Traxxas 4-Tec-\$185
- Tamiya TT-01 XB-\$200
(prices vary with dealer)

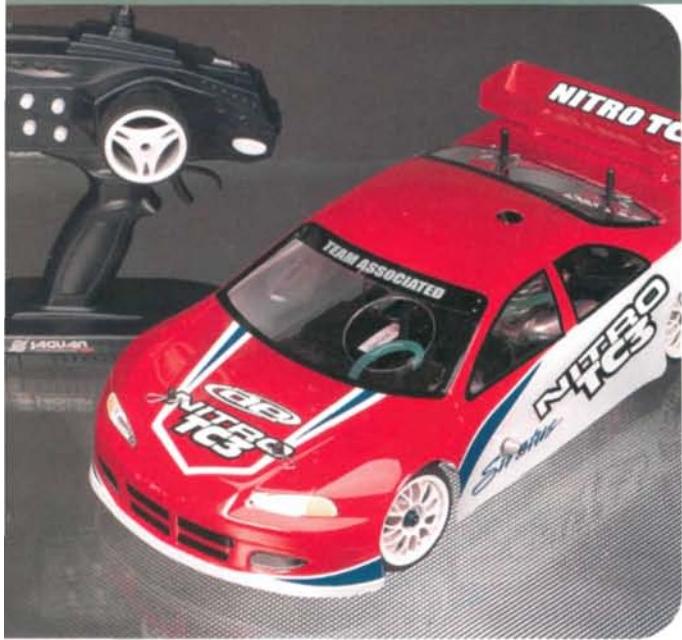


6 RTRs
TOURING CAR
ELECTRIC



QUICK SPECS

PRICE: \$300 (price varies with dealer)
TOP SPEED: 45.6mph
WHEELBASE: 10.22 in. (260mm)
OVERALL LENGTH: 15 in.
TRANSMITTER: Ace Jaguar 2-channel radio
SERVOS: Ace S1903
ENGINE: Associated .12 pull-start (built by Thunder Tiger)



TEAM ASSOCIATED NITRO TC3

Why we like it: the Nitro TC3 RTR sports almost all the go-fast goodies of the super-popular build-up kit, plus a painted and trimmed body and an Ace Jaguar radio. The suspension is fully adjustable; Associated even throws in a clever camber gauge to help you get the most out of the handling. The Thunder Tiger-built .12 engine is completely ROAR-legal and pumps out plenty of horses. An aluminum drive shaft sends all that power to the pavement through robust front and rear ball diffs. From bumper to bumper, the TC3 is packed with serious hardware for serious performance—we had to pick it!

Save up for: 2-speed transmission

The shifting tranny is about the only piece on the kit TC3 that doesn't come stock with the RTR, but it is available separately and is a direct bolt-on. The 2-speed will bump your top end above 50mph, and the shorter first gear will help the car accelerate harder through the entire speed range.



The pivot-ball suspension is easily adjustable for caster, camber, toe and ride height.



Rear toe-in is adjusted via turnbuckles, and droop screws set ride height. The RTR TC3 is just as tunable as the full-race kit cars.



Associated's powerful .12 engine is race-legal and pushes the TC3 past 45mph.

you'll need

- Fuel
- Fuel bottle
- 12 AA batteries
- Glow igniter
- Air-filter oil

VCS MACRO SHOCKS

EASY-OUT RADIO DECK

HIGH-PERFORMANCE
DISC BRAKE

2.5MM ALUMINUM CHASSIS

ASSOCIATED .12
PULL-START ENGINE

ENCLOSED RECEIVER BOX

ALUMINUM TUNED PIPE

SHAFT-DRIVEN 4WD SYSTEM

STEEL TURNBUCKLES

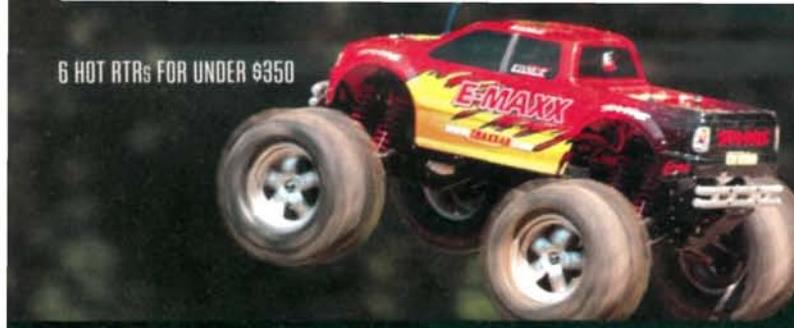
ADJUSTABLE PIVOT-BALL
SUSPENSION

other top picks:

- DuraTrax Street Force-\$250
- HPI Nitro RS4 3 RTR-\$290
- Traxxas Nitro 4-TEC-\$330
- Yokomo GT-4 RTR-\$350
(prices vary with dealer)



6 HOT RTRs FOR UNDER \$350



6 RTRS POWER PICKS

Nitro or Electric?

If you're still trying to choose your first RC car or truck, you're probably pondering that very question. Consider the following before you choose!

Cost: once you factor in all the support gear required to run your car or truck (usually batteries and a charger for an electric; nitro fuel and a glow igniter for a nitro-RTR), there's little difference in price between a nitro-powered car and its electric counterpart. But keep in mind, batteries must be replaced far less frequently than fuel.

Speed: nitro machines still have the edge here; check out the top speeds of the featured RTRs. But don't be discouraged, electric guys; an aftermarket motor is usually all it takes to boost speed by as much as 10mph.

Run time: another plus for nitro power. As long as you have fuel to burn, you can drive pretty much nonstop (but it's a good idea to let the engine rest after every couple of tanks). If you go electric, you'll have a long stretch of downtime as you wait for the battery to recharge. The solution is to get at least three packs, so while you're driving you can have a charged pack on deck while the third recharges.

Ease of operation: here's where electrics have the decided edge. You'll never have to wonder if your engine will start or worry that you've tuned it wrong. As long as your batteries have juice, you'll be running. And if you aren't, electric troubles are usually much easier to diagnose than engine-power problems.

The neighbor factor: if you plan to run in your backyard and you have neighbors nearby, don't be surprised if they aren't quite as jazzed about how cool your nitro ride sounds as you are. Electric machines are virtually noiseless by comparison, and that helps keep the peace. But if your favorite spot to drive is far from civilization, go loud! ■

SOURCES

DuraTrax distributed by Great Planes Model Distributors; duratrax.com.

Dynamite distributed by Horizon Hobby; dynamiterc.com.

Great Planes Model Distributors (217) 398-6300; (800) 682-8948; greatplanes.com.

GS Racing distributed exclusively by Horizon Hobby Inc.

Horizon Hobby Inc. (800) 338-4639; horizonhobby.com.

HPI Racing (949) 753-1099; hpiracing.com.

Kyosho distributed by Great Planes Model Distributors; kyosho.com.

OFNA (949)-856-2910; ofna.com.

Tamiya America Inc. (800) 826-4922; tamiyausa.com.

Team Associated (714) 850-9342; teamassociated.com; rc10.com.

Team Losi distributed by Horizon Hobby; teamlosi.com.

Traxxas Corp. 972-265-8000; traxxas.com.

XTM Racing distributed by Global Hobby Distributors, (714) 964-0827; globalhobbyy.com.

Yokomo USA Inc. (949) 252-8663; yokomousa.com.

tracktest >>>

1/10 SCALE ELECTRIC STADIUM TRUCK

BY MATT HIGGINS





THE a-TEAM'S NEW
TOP TRUCK

Associated RC10T4

THE NEW B4 HAS ALREADY PROVEN ITS WORTH by sweeping the Pro-Line Cactus Classic, winning the Stock and Modified Buggy classes with team driver Ryan Maifield as the pilot. Now the T4 is out, and it has already proven itself an equal running mate by TQ'ing and winning at its first outing—this summer's Off-Road Shootout at Hot Rod Hobbies in California. Billy Easton took home all the top hardware, and Jared Tebo further boosted Associated's presence by taking second with his T4.

The B4's wider, lower design makes it a natural jumping-off point for the T4, and features such as a new dual-pad slipper, larger differential and new suspension geometry seal the deal. Associated's new truck is out and winning; let's see why.

KIT FEATURES

CHASSIS. The T4 retains the use of a molded chassis, but this fourth-generation truck has a whole new design. One of the major differences is that the nose plate is now molded in, and while the transmission plate is still a separate piece, it is now fashioned out of molded plastic instead of aluminum. Like previous designs, the chassis' sides are angled upward to decrease the likelihood of the chassis scraping during hard cornering. These angled sides also decrease the surface area that slaps down and creates speed-robbing friction when landing off big jumps. As a whole, the chassis has much smoother lines than previous trucks in the "T" series.

DRIVE TRAIN. The T4 has the same transmission as the B4, and it uses the 52-tooth differential originally designed for the RC10GT. The bigger gear allows the use of larger-diameter rings; it can thus handle a larger load. The transmission gear ratio is higher (2.6:1—lower than the T3's 2.4:1). The next big change is the new slipper design. A more reliable and consistent dual-slipper-pad design is used, and the outside circumference of each pad is octagonal to be keyed with the spur gear. Associated first ran a prototype of this double-sided slipper design back in 1989. The entire Stealth transmission housing is more laid down, so a low center of gravity is retained for good handling characteristics; a new mounting design greatly reduces any transmission-end longitudinal flexing; and a shock-absorbing plastic motor guard is now used instead of the stamped, one-piece aluminum unit. Genuine MIP CVDs show up again in the T4 but are now 4mm longer, and all of the T4's rotating parts turn on ball bearings. The included clear-plastic gear cover does protect the spur and pinion gears from larger track debris, but check your gears frequently; the cover doesn't



At a glance, the transmission might look the same as the T3's, but a keen eye will spot the RT10GT's 52-tooth diff gear and a new, more low-slung case.

completely seal them against dirt, and smaller stuff can easily get in.

SUSPENSION AND STEERING. The new, eye-catching front-suspension design definitely steals the show. The front shocks' upper mounting points have been moved behind the shock tower. Associated was first seen to be experimenting with this concept back 1991—on a prototype buggy piloted by Masami Hirosaka. The design yields a lower center of gravity for more stability in the corners and on the rough sections. A pair of molded-in risers on each arm captures the lower shock mounting point (on the T3, there was only one bolt-on riser). The inboard mount now uses a vertical ball stud, as does the rear. This means that the truck's roll centers can be changed to suit track conditions.

The rear shock tower is also tailored for the chassis end of the anti-roll bar. The hinge pins used throughout the suspension are all retained by small button-head screws instead of E-clips. The T4 has also been stretched to fit ROAR-legal dimensions; it is ½ inch wider, and its wheelbase is a substantial ½ inch longer than the T3's.

Associated Team-level, hard-anodized shocks once again do duty in the T4. The shocks have a Teflon-coated bore for friction-free smoothness. All

four shocks have 30WT silicone fluid flowing through the holes of the solid Teflon pistons.

The T4's steering system starts with a cam-type servo-saver that is built into bellcranks that are very much a departure from previous Associated units. The two bellcranks are angled to match the front caster angle. When they're viewed from the side, it's easy to see that the kingpin is tilted backward at the same angle as the bellcranks. Associated calls this angled-bellcrank design its "Co-Planar Steering." The steering blocks use a trailing-axle design, but the inline setup is available as an option if more aggressive steering is needed.

BODY, WHEELS AND TIRES. Pro-Line provides the tires and white plastic dish rims for the T4. The front tires are the company's ribbed The Edge models, and the rears are Hole Shots. If you have a box of tires for your T3, you're in luck because the T4 can use the same rims as its older sibling. The included T4 rims are the newer, more rigid Pro-Line design.

A new truck deserves a new body. The Interceptor shell sits very low, and the rear humps for the shocks have been reduced. The overall look is more like the real thing, but this body is anything but sedate: the nose has a very cool, aggressive look. What would be wing mounts on the B4 serve as body mounts on the truck. Josh Thiel painted the body for us.

BUILDING & SETUP TIPS

The T4 went together as well as or better than any other kit I've ever built. Nothing had to be hand-fit, and it was a pleasure to assemble.

BAG B, STEPS 1, 3 AND 6.

In these steps, you will use both plastic and metal washers. The 0.030 washer (item no. 4187) is used in steps 1 and 3. The metal washers (9630) are used in step 6 under the long, silver ball ends on the shock tower.

BAG C, STEPS 7 AND 18.

Don't forget to squeeze the diff thrust spring and the slipper spring a few times with a pair of pliers to break them in. This will ensure that they work properly without binding.

BAG C, STEP 4.

Don't be bashful with the black grease for the thrust bearing; this part endures high loads and can use the lube.

BAG F, STEPS 4 AND 9.

To minimize the chance of leaving flashing on the shock pistons, hold the piston parts tree with the numbers facing upward, and gently pry the piston up to remove it from the tree. If there is any flashing or waste material left on the piston, carefully trim it away. Also, because only one side of the piston is numbered, make sure that side faces

upward when you install it on the shock shaft. If you don't, you won't be able to identify the pistons later without disassembling the shocks.

BAG F, STEPS 20 AND 21.

Do not overtighten the nut that retains the top of each shock, or the shocks could bind and adversely affect your truck's handling.

you'll need

- Transmitter and receiver
- Steering servo
- Electronic speed control
- Motor
- 6-cell battery
- Charger
- 48-pitch pinion
- Tire glue
- Polycarbonate-compatible paint

factory options

- Full carbon parts set—item no. 7467
- Threaded-aluminum shock bodies (F/R)—7414/7412
- Titanium turnbuckle set—1283
- Inline steering blocks—9577
- Inline axles—9616B
- Steering-rack bearings—3971
- Factory Team aluminum
 - > Motor plate—9600B
 - > Shock caps—1598
 - > Hinge-pin brace—9616

Partial list; many more options are available.

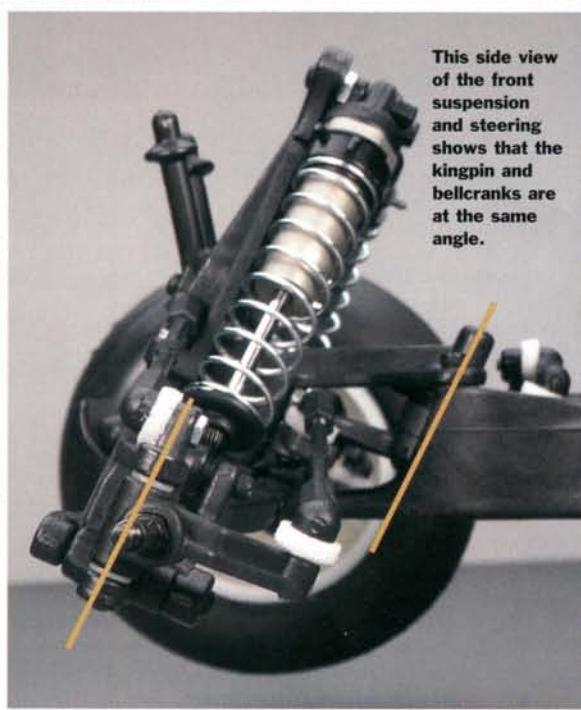
THE COMPETITION

MODEL	CHASSIS	TURNBUCKLES	BEARINGS	DIFF	TRANS. RATIO	SHOCKS	DRIVE AXLES	SLIPPER CLUTCH	PRICE	REVIEWED
Team Associated T4	Plastic composite	Steel	Rubber-sealed	Ball	2.6:1	Aluminum	MIP CVD	Dual-pad	\$200	11/03
Team Losi Triple-XT MFE	Graphite composite	Titanium	Teflon-sealed	Ball	2.43:1	Threaded aluminum	MIP CVD	Dual-pad	\$260	1/02

Price varies with dealer



Notice how the front shocks are mounted behind the shock tower. The inboard camber-link mounts are vertical so that roll centers can be adjusted. A lower link mount will yield less roll, and vice versa.



This side view of the front suspension and steering shows that the kingpin and bellcranks are at the same angle.

SPECIFICATIONS

MANUFACTURER Team Associated
MODEL RC10T4 Team Kit

SCALE $\frac{1}{10}$
PRICE \$200
Varies with dealer

DIMENSIONS

Wheelbase 11.75 in. (298mm)
Width 13 in. (330mm)

WEIGHT

Total, as tested 58.4 oz. (1,656g)

CHASSIS

Type Molded semi-tub
Material Composite plastic

DRIVE TRAIN

Type 3-gear transmission
Primary Pinion (not included)/
87-tooth spur gear
Transmission ratio 2.6:1
Drive shafts MIP CVD, steel
Differential Ball type with steel
outdrives
Bearing type Rubber-sealed ball
bearings

SUSPENSION (F/R)

Type Lower H-arm with turnbuckle
camber link
Shocks Aluminum-body with clip-on
preload spacers

WHEELS

Type 2.2-in. one-piece plastic

TIRES

Type (F/R) Pro-Line M3 Edge/
Pro-Line M3 Hole Shot T

TUNING OPTIONS T4 vs. T3

With more tuning options, the T4 is more adaptable to a wider variety of tracks and conditions. Check out how Associated improved the T series with more tuning options.

TUNING OPTION	T4	T3
Front shock positions (upper/lower)	3/2	2/3
Rear shock positions (upper/lower)	3/2	3/1
Front camber-link positions (inner/outer)	2/2	2/1
Rear camber-link positions (inner/outer)	2/3	2/2

PERFORMANCE

There is no more appropriate place to test a vehicle such as the T4 than at the racetrack. My local track is Xtreme RC Raceway in New Milford, CT. This also happens to be the track on which we put the B4 through its paces. This track hosts weekly events and is very typical of New England RC racing venues and of East Coast tracks in general. The surface is not hard-packed and is what many racers refer to as "real" off-road. Racers aren't the only ones with an East Coast versus West Coast thing going on.

My first few laps were slow because I wanted to dial in the steering trim. Before climbing onto the drivers' stand, I also did a few holeshots on the straight and some throttle bursts rolling out of the corners to get a setting for the slipper. The new dual-pad slipper is much more adjustable than the previous design and provides a confident feel in adjustment and not the "I think I got it right" feel.

As equipped out of the box and with the hot Reedy batteries and mod motor, I could easily make the T4 swap ends with too much throttle. While the included Pro-line tires are an awesome combo on hard-packed tracks, Xtreme's soft surface called for larger knobs—Step Pins would probably have been ideal. But the Holeshots still hooked up; being mindful of my throttle and steering inputs, I was able to take the T4 around the track at racing speeds. It absolutely ripped off the line and carried awesome speed through the corners, staying nearly level. The Xtreme layout consists of many switchback turns, and where my T3 had needed brake inputs to go around fast, the T4 simply cut deeply into the corners and sprang out onto the next straight. Rugged sections that formerly made me nervous I now sailed over at full throttle, thanks to the bump-steer-free Co-Planar Steering. This design greatly increases the truck's stability through rough sections. It's now better able to hold its line as it speeds over small bumps and ruts. It is also more consistent and offers far fewer surprises where the terrain isn't even. The moguls you once had to slow down for will no longer be a problem.

Even with the stock setup, the T4 quickly proved that it was faster than my T3. When airborne over jumps, its attitude was easy to control with blips of throttle (to keep the nose up) or a touch of the brake (to lower the nose). The T4 handles jumps very well and doesn't have to approach them perfectly for the landing to be a success. The longer arms and longer chassis make this truck very stable and forgiving.



THE VERDICT

The T4 makes it apparent that Team Associated didn't set out to build just another truck or just a new truck; it set out to build its best truck. It doesn't want to challenge; it wants to dominate. It's obvious that there's a great deal of R&D behind this project. Proven design concepts have not only been retained but have also been improved, and new, innovative concepts take center stage on what is an awe-inspiring platform. The 2WD electric stadium truck battle will rage hotter than ever!

LIKES

- > Super-easy to assemble.
- > Co-Planar Steering increases stability.
- > New, dual-pad slipper clutch.
- > Includes genuine Pro-line racing rubber.

DISLIKES

- > Gear cover is not on a par with the rest of the truck.

TEST GEAR



LRP Quantum Competition 2 ESC

The new Quantum Competition 2 (QC2) unit features what LRP dubs "Reactive Frequency." This tailors the drive frequency to suit prevailing conditions—all while on the run. The new ESC will alter the drive frequency to a lower setting to increase acceleration out of corners and will adjust again for more speed down the straight (with a higher-frequency setting). The QC2 is also totally waterproof and will be offered at no increase in price over the Quantum Competition ESC it replaces.

Additional items used to complete the T4

Hitec Aggressor CRX transmitter and DCX receiver

Hitec HS-5945MG steering servo

Reedy Krypton 10-turn modified motor

Reedy/Yokomo Xcel 3300 matched pack

Robinson Racing Absolute pinion 18-tooth pinion

RATING THE ASSOCIATED RC10T4

	POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
INSTRUCTIONS					
PARTS FIT & FINISH					
ACCELERATION					
CORNERING ABILITY					
BUMP & JUMP HANDLING					
DURABILITY					

RADAR TESTED TOP SPEED

38MPH*

BEST BUYER

Any off-road racer

* Top speed varies with equipment used.

SOURCES

HITEC/RCD (858) 748-6948;
hitecrcd.com.

LRP distributed by Team Associated.

MIP (626) 339-9007; miponline.com.

PRO-LINE (909) 849-9781;
pro-lineracing.com.

REEDY a division of Team Associated.

ROBINSON RACING (209) 966-2465;
robinsonracing.com.

TEAM ASSOCIATED (714) 850-9342;
teamassociated.com; rc10.com.



XTM Racing Nitro X-Cellerator

THERE USED TO BE A VERY CLEAR LINE between racing kits and ready-to-runs (RTRs), but that line is now blurrier than most UFO sighting photos. Maybe the line isn't even there at all; the latest XTM Racing nitro stadium truck is solid evidence of that. The XTM guys have really been on the gas (pun intended) with exciting new "X" designs like the X-Terminator $\frac{1}{8}$ scale buggy, X-Factor monster truck, and now the X-Cellerator stadium truck. At first glance, the Nitro X-Cellerator looks like a genuine racing machine—not the typical RTR. Get closer, and you can see why; from bearings and a ball diff to threaded-body aluminum shocks and turnbuckle camber links, this truck matches racing rides feature for feature. And then there's the engine; it's XTM's new .18—a serious-looking 3-port mill that should help make the X-Cellerator an impressive accelerator. I bet you saw that one coming a mile away.

X-Cellent
RTR



KIT FEATURES

CHASSIS. Hmm ... that chassis doesn't look like the usual 2.5mm aluminum slab. It isn't; it's a full 3mm, and that gives the X-Cellerator a solid platform for the suspension and drive-train components. The chassis sides are radiused for additional strength, and its nose is braced by a short upper deck that also holds the steering servo. A 3mm aluminum brace bridges the transmission, a bulkhead on the chassis stiffens the rear end and a pair of plastic boxes holds the radio gear. The box behind the steering servo holds the receiver, and the "trunk" that hangs off the back of the chassis carries the receiver battery.

DRIVE TRAIN. XTM reached for the standard racing truck playbook and spec'd all the gear that you could hope for in a track-ready truck. Let's start where the engine's power enters the transmission: the slipper clutch. A pair of pressure plates squeezes the spur gear between dual pads for precise slip adjustment. Thanks to the X-Cellerator's 3.31:1 transmission ratio, a compact 46-tooth spur gear lets the transmission spread low on the chassis to keep the truck's center of gravity as close to the chassis as is possible.

Inside the gearbox, you'll find the X-Cellerator's ball differential. It has 12 balls, steel outdrives and a caged thrust bearing, and it feels as smooth as the diffs from Associated and Team Losi—now, *there's* a compliment. The diff unwinds into a pair of CV-style universal-joint drive axles, and anything that spins, spins on metal-shielded ball bearings. When it's time to stop, a 3mm-thick fiberglass brake rotor and steel caliper do the pinching through a wire cam linkage. Everything rolls smoothly and easily, and the drive train feels as if it will do a good job turning engine power into forward motion.

SUSPENSION AND STEERING. The X-Cellerator's vivid blue-anodized shocks are difficult to miss. Their threaded aluminum bodies make it easy to set spring preload without keeping track of clip-on spacers, and the shocks use a bottom-fill configuration that most drivers find easier to rebuild and bleed properly. Not that you'll need to worry about that anytime soon; XTM fills the shocks with silicone fluid at the factory. Soft rubber boots on the shock shafts also help you put off dealing with shock fluid; the boots keep the shafts clean, so dirt doesn't reach them or get pulled past the seals.

A conventional lower H-arm/upper-camber-link suspension system squeezes the shocks in the usual way, but it's the details that matter. The camber links are 3mm steel turnbuckles, so you can set camber without disassembling anything. The steering kingpins double as attachment points for the outboard ends of the camber links to help provide stable



Inside the tranny. The laydown gears deliver a 3.31:1 ratio, and the top gear is steel. Shielded ball bearings are standard.

handling. The front inboard hinge pins are tied together by a steel brace, and the ball studs wear foam rings to keep dirt out (that isn't a big thing, but it does show that XTM cares about the little touches).

The steering system is standard stuff. A pair of plastic bellcranks swings the steering arms by means of a pair of turnbuckles that are identical to the camber pieces, and an adjustable servo-saver is built into the system. If you like to experiment, you can try the two optional Ackerman positions on the bellcranks.

ENGINE AND ACCESSORIES. No matter how nice its other details are, a nitro car or truck is only as good as its engine. Lucky for us, the well-sorted X-Cellerator platform is backed up with an exceptional engine. XTM designed its 3-port sleeve with ABC construction (aluminum piston, chrome-plated brass sleeve) to last through many tanks of fuel. The connecting rod is machined of solid aluminum and is "knife-edged" for maximum performance. The aluminum-body carburetor has low- and high-end needles for complete tunability, and the rear-exhaust .18 powerplant just plain looks fast with its nicely finished, oversize heat-sink head. Even the air filter is nice; it's a scaled-down version of a buggy-type foam filter. A 2-shoe clutch with a waist spring and steel clutch bell is standard.

A seamless, polished-aluminum tuned pipe and spring-mounted manifold help the engine breathe, and a centrally mounted 75cc fuel tank keeps the nitro flowin'. With the fuel tank mounted in the center of the chassis, changes in fuel level don't affect the chassis' balance. The tank is also free of priming devices (good; they often leak), and it has built-in fuel-line routing clips. Nice touch.

BODY, WHEELS AND TIRES. The X-Cellerator's five-color, screen-printed body looks good and fits well. Applying the pre-cut decals is left up to you; they may look a little different when you see the X-Cellerator in the hobby shop

INCLUDED ELECTRONICS & ACCESSORIES**HITEC LYNX SPORT TRANSMITTER**

The Sport is a reliable radio with smooth wheel and trigger action, but as Hitec's most inexpensive transmitter, it's very light on



features. You get trim levers and servo-reversing switches, and that's about it. It's plenty for fun running, but for a truck as performance-oriented as the X-Cellerator, it would be nice to see XTM bump up to Hitec's Aggressor system, which includes steering dual rate.

HITEC HS 311 SERVOS

Hitec claims its standard plastic-gear HS 311 servos are good for 51 oz.-in. of torque, and judging by the X-Cellerator's crisp steering and solid braking, that sounds about right. If the servos weren't up to the task, the truck's steering wouldn't have been as precise as it was.

you'll need

- Nitro fuel
- Fuel filler bottle
- Glow igniter
- 12, AA batteries

factory options

- Swaybars (F/R)—item nos. 149172/149173
- Black & blue chassis—149181
- Shock spring (hard)—149182
- 17T clutch bell—149072

THE COMPETITION

MODEL	TRANSMITTER	ENGINE	DRIVE AXLES	SHOCKS	GLUED TIRES	BEARING TYPE	PRICE	REVIEWED
Associated RC10GT RTR	Ace Jaguar	TTR .12	Dogbones	Aluminum	Yes	Ball bearings	\$279	10/02
DuraTrax Nitro E�ader	DuraTrax by Futaba	DTX.18	CV-style steel	Threaded aluminum	Yes	Ball bearings	\$260	7/03
Team Losi Triple-XNT Sport	JR XR3i	Mach .15	Universal sliders	Aluminum	Yes	Ball bearings	\$329	5/02
Traxxas Nitro Rustler	Traxxas TQ	TRX 2.5	Universal sliders	Plastic	No	Ball bearings	\$299	6/03
XTM X-Cellerator	Hitec Lynx Sport	XTM .18	CV-style steel	Threaded aluminum	Yes	Ball bearings	\$260	11/03

Partial listing; category is too large to include all vehicles. Price varies with dealer.



SPECIFICATIONS

MANUFACTURER XTM Racing

MODEL X-Cellerator

DISTRIBUTED BY Global Hobby Distributors

SCALE $\frac{1}{10}$

PRICE \$260

Price varies with dealer.

DIMENSIONS

Wheelbase 11.5 in. (292mm)

Width (F/R) 13/13.25 in. (330/337mm)

WEIGHT

Total, as tested 71.2 oz. (2,018g)

CHASSIS

Type Stamped plate

Material 3mm aluminum

DRIVE TRAIN

Type 3-gear sealed transmission
Primary 15T clutch bell/46T spur gear

Transmission ratio 3.31:1

Final drive ratio 10.15:1

Drive shafts CV-style, universal axle

Differential Ball diff with steel outdrives

Bearing type Metal-shielded ball bearing

SUSPENSION

Type Lower H-arm with turnbuckle upper link

Shocks Threaded-aluminum body with dust boots

WHEELS

Type One-piece dish

TIRES

Type (F/R) Eight ribs/ladder bar and step pin

ENGINE AND ACCESSORIES

Engine XTM Racing .18 with pull-start

Carburetor 2-needle rotary

Exhaust Round-port manifold with tuned pipe

Fuel tank 75cc



Above: the suspension arms are chunky, and steel turnbuckles make camber adjustments simple. You can adjust the X-Cellerator's wheelbase by swapping spacers on the hub carriers' hinge pins.



Below: the steering system uses a combined kingpin/ball stud, and the $\frac{3}{16}$ -inch axles accept Team Losi wheels.



Left: XTM's .18 engine is a powerhouse. It's easy to start and tune, thanks to a 2-needle carburetor.

Below: the truck's threaded-body aluminum shocks have a bottom-fill design and use soft boots to protect the shock shafts.

TRACK TEST HTM RACING X-CELLERATOR

because the designs weren't final when we photographed our tester. White dish wheels are standard, and they wear "firmish" tires. The fronts have eight shallow ribs, and the rears feature an aggressive ladder-bar tread that has

heavy center lugs and step-pin outer knobs. If you want different rubber, you can buy another set of XTM rims and any 2.2-inch tires, or you can install any wheel that's designed for Losi trucks and they fit just like factory.

PERFORMANCE

If you prime the carb, make sure that the glow-igniter is charged and give it a good tug, the XTM .18 will fire up on the first pull. I wasted no time and rolled through progressively leaner tanks of fuel until the engine was loosened up and ready to rip. Before I headed off to the badlands of Bethel Supercross, CT, I made a few passes for the radar gun, and the best speed was 46mph. Without a 2-speed tranny, that's about as fast as any truck can go, whether it's a racing truck, kit, or RTR. But let's not waste the knobs on pavement—time to hit the dirt.

There's no better place for fun running than at a BMX track, and there's no better test of a truck's durability. Since you can't go 10 feet without hitting a jump, jump testing came first. I made most of my runs over an eyeball-high set of doubles that sent the X-Cellerator well above my head before it soaked up the back side of the second jump on the way to a tabletop. It was pure textbook jumping: roll off the lip, ease off the throttle to level out, touch the brake to set up for the back side, and then roll out. Not that I made every launch so perfectly; I did case my share of jumps, which went a long way in testing the X-Cellerator's durability. A few solid whacks on the battery box were enough to pull its mounting screws loose, but the box never parted with the chassis. It's a tough truck!

Clearing the track's step-up and tabletop jumps was just as easy, and railing the massive "Ring's end" paved berm was a blast. I don't know how many Gs the X-Cellerator pulled in that big black bowl, but I could hear the tires squirming against the pavement as centrifugal force pressed it against the blacktop.

The BMX track didn't have RC-size turns to test the X-Cellerator's handling, so I packed up and headed for Xtreme RC in New Milford, CT. The track's soft stuff layered on top of the hard-pack produced loose cornering, but the X-Cellerator was easy to pitch into turns and steer with the throttle. The shallow-rib front tires didn't dig into the soft stuff as well as tires with taller ribs might, and the meaty rears easily overpowered the available front-end traction when turning with the power on. As soon as I chopped the throttle, the X-Cellerator rotated nicely.

THE VERDICT

Good job, XTM; the X-Cellerator is a bash-worthy backyard machine that also handles well on a racetrack. The engine is easy to start and tune, yet very powerful, and it had no trouble running all day. The factory assembly was very good, too; even the radio trims were spot on. The only thing I found myself wishing for was a more adjustable transmitter; if the Lynx Sport had dual-rate steering, the X-Cellerator package would be just about perfect.



RATING THE HTM RACING X-CELLERATOR

	POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
INSTRUCTIONS					
INCLUDED ELECTRONICS					
PARTS FIT AND FINISH					
ACCELERATION					
CORNERING ABILITY					
BUMP & JUMP HANDLING					
DURABILITY					

Engine manual and operation guide are thorough; a from-the-ground-up assembly manual helps with rebuilds.

The Lynx Sport gear is high-quality, reliable stuff, but as Hitec's most inexpensive system, it's short on features.

The X-Cellerator is certainly XTM's best-looking ride yet, with first-class fit and finish all the way.

With a power .18 displacement and a 2-needle carb, the X-Cellerator to blasts off the line in a hurry.

Predictable and fast. With the correct tires, the X-Cellerator should be able to hang with any racing truck.

The suspension is very well sorted out and is easy to set low for the track or jacked for jumping.

No breakage during testing—not even a popped-off linkage. The spur gear held up well, and the brake disc still looks like new.

RADAR TESTED TOP SPEED

46MPH*

BEST BUYER

Any off-road nitro-power fan, particularly those with racing aspirations.

*Top speed varies with operating conditions.

LIKES

- > Threaded shocks, big engine, turnbuckles and ball diff. Did you read the article?
- > Clean, easy-to-wrench-on chassis layout.
- > Accepts Team Losi wheels.
- > Fast, tough and raceable.

DISLIKES

- > Stock tires aren't as racy as the rest of the truck (good for the backyard, though).
- > A truck this nice should have radio gear with more features—dual-rate steering, at least.

TEST GEAR



Trinity Monster Horsepower 20% nitro

I used Trinity's Power Blend; it has 12-percent synthetic/castor lube for maximum engine life. Trinity also touts the fuel's 99.9-percent pure methanol and nitromethane, but all I know is that it's purple and makes the truck go fast.

SOURCES

HITEC/RCD (858) 748-6948; hitecrcd.com.

TRINITY PRODUCTS INC. (732) 635-1600; teamtrinity.com.

XTM RACING distributed by Global Hobby Distributors (714) 964-0827; xtm.globalhobby.com.

OFNA LD3 Pro

OFNA RECENTLY JOINED THE NITRO-POWERED SHAFT-DRIVE 4WD CLUB when it released the LD3 ready-to-run (reviewed in June), which was followed up quickly with the LD3 Pro kit. The LD3 Pro is loaded with features that bring it up to full race specifications and include a hard-coated and milled-out chassis, O-ring-sealed bevel-gear differentials, a shoe-type 2-speed transmission, hardened-steel ring and pinion gears, hard-coated, threaded-body aluminum shocks, ultra-rigid suspension components and much more. On the bench, the LD3 Pro looks ready to compete at the highest levels; let's see how it looks on the track.





FULL RACE **SHAFT** **SHIFTER**

TRACK TEST OFNA LD3 PRO

KIT FEATURES

CHASSIS. The LD3 Pro's 2.7mm-thick, hard-coated chassis is ultra-stiff. The chassis is milled out to reduce weight, and beveled edges prevent it from scraping the track during hard cornering. Flywheel access is very generous, thanks to the giant cutout under the flywheel, and a milled-out LD3 logo looks cool.

A rigid-plastic upper deck houses the steering and throttle servos and the onboard electronics. The receiver and onboard battery pack are housed in separate boxes with lids that are secured with body clips. The upper deck is designed to hold the electronics low on the chassis, allowing a lower center of gravity. The upper deck also has a place to mount the on/off switch, and a provided silicone switch cover provides protection from dust and road grime.

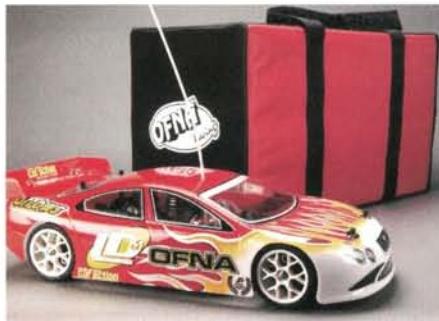
DRIVE TRAIN. The LD3 Pro's drive train follows the shaft-drive standard, with the engine installed in-line on the chassis' left side with the clutch facing the rear of the vehicle. A 5mm aluminum shaft connects the front gearbox to the aft-mounted 2-speed transmission. The clutch-type unit provides smoother shifts than typical "finger-type" systems, and the shift point is completely adjustable. The main 2-speed-shaft is connected directly to the rear diff with hardened-steel ring and pinion gears. The front and rear bevel-gear diffs have six hardened-steel internal bevel gears (four spider gears and two output gears), and the diff cases are sealed with O-rings to allow them to be filled with heavy silicone diff fluid instead of the kit-supplied grease. A heavy-duty, steel, one-way front pulley is also included for racing on high-bite tracks. Access to the diffs is simple: remove six screws, and the diff is in your hand.

Power is transferred to the front and rear wheels by rebuildable CV-type drive shafts, and a complete set of maintenance-free, rubber-sealed bearings keeps the drive train and axles spinning smoothly. A cam-actuated disc-brake system slows the vehicle down. A pair of steel calipers with fiber-brake pads clamp down on the vented steel-brake rotor to provide wheel-locking stopping power.

SUSPENSION AND STEERING. The LD3 features a highly tunable pivot-ball suspension. Easy-access setscrews threaded into the suspension arms allow suspension droop adjustment, and pivot balls are threaded into the upper and lower front suspension arms to allow camber and subtle width adjustments. Front caster is set from 8 to 14 degrees by installing clip-on spacers on the upper hinge pins. The rear hub carrier has a pair of lower pillow balls that adjust rear width and toe-in, while steel turnbuckles adjust rear camber.

Identical front and rear shock towers are molded of rigid plastic, and several upper and lower shock-mounting positions broaden the tuning capabilities. A complete set of threaded-body aluminum shocks handles the damping, and a complete set of medium-tension, yellow powder-coated springs provide a smooth ride. Front and rear adjustable "blade-type" swaybars are standard and keep the chassis flat during cornering.

ENGINE AND ENGINE ACCESSORIES. You can purchase the LD3 with or without an engine. If you opt for the engine-equipped LD3 Pro, you'll get a sweet OFNA/Pico .12 XP-R racing engine. Both kits include all of the



A cool, 2-box carrying bag is included to transport the LD3 Pro to the track.

necessary engine-support equipment as well as an awesome one-piece, dual-chamber in-line pipe.

The engine is installed on low-profile, adjustable engine mounts, and a lightweight, non-pull-start aluminum flywheel is included. A 3-shoe racing clutch provides smooth and consistent acceleration, and the threaded 2-speed clutch bell has thread-on first- and second-gear pinions.

I could tell that the design of the 75cc fuel tank had involved lots of R&D time. Part of its super-low profile extends underneath the drive shaft to keep the weight as low as possible (remember, when full, the fuel tank is the second heaviest component on the chassis). The tank also has a built-in stone filter, a spill-way with runoff and a quick-fill cap with a removable pressure tap.

BUILDING & SETUP TIPS

SUSPENSION BINDING

To prevent binding, use fine-grit sandpaper to sand away a little material at a time from one side of the upper front and rear suspension arms. Trial-fit the parts often so you don't remove too much material, or the suspension will slop.

PAGE 4 STEPS 1 – 4 The kit comes with grease to lubricate the internal diff gears, but using heavy silicone diff fluid will provide improved handling. I filled the front diff with 120,000WT diff fluid and the rear diff with 50,000WT. The diffs felt a bit notchy at first but became much smoother after a few minutes of running.

PAGE 6 STEP 2 Pay attention to the illustration when you build the 2-speed clutch shoes; the metal balls must be positioned on top of the flat spots on the 2-speed clutch-shoe carrier when you assemble them. If the clutch-shoe carrier is installed incorrectly, you won't be able to thread in the setscrews all the way that push the balls against the clutch-shoe carrier.

PAGE 7 STEP 4 Install the 5x11 ball bearing and 5x8 washer behind the roll pin on the 2-speed main shaft instead of in front of it, as shown in the illustration.

PAGE 15 STEP 1 Use the provided 3x15mm button-head screws to install the throttle servo onto the servo posts. The instructions tell you to use 3x10mm screws, but they're too short.

PAGE 41 OF THE SUPPLEMENTAL INSTRUCTIONS

The holes on the front and rear stabilizer mounts, where the suspension pins go through, are too small, and that causes binding. Enlarge the holes with a tapered reamer to allow the suspension pins to pivot smoothly.

you'll need

- 2-channel radio system with 2 servos
- 12 AA batteries
- Starter box
- Fuel and fuel bottle
- Tire glue
- Polycarbonate paint

factory options

- Aluminum-
➤ servo mounts—item no. 38436
➤ steering, 38437 (throttle)
- lower arm holder (F/R)—38446
- brake mount—38450
- brake-disc mount—38451
- Graphite-
➤ upper bumper—38439
➤ radio tray—38440
➤ rear stiffener—38438
➤ side-plate set—38441

THE COMPETITION

MODEL	CHASSIS	DRIVE TRAIN	DIFFS	DRIVE AXLES	2-SPEED	SUSPENSION	BODY	TIRES	PRICE*	REVIEWED
Associated Nitro TC3 Team	2.5mm	Shaft	Ball	MIP CVD	Clutch type	Pivot-ball	Not incl.	Rubber	\$269	05/02
GS Racing Vision Pro	4mm	3-belt	Gear	Universal	Clutch type	Pivot-ball	Stratus	Foam	\$309	12/02 RC Nitro
Kyosho V-One RR	3mm	3-belt	Gear	Universal	Finger type	Pivot-ball	Stratus	Foam	\$399	09/01 RC Nitro
Mugen MTX-3	3.2mm	3-belt	Gear	Dogbones	Clutch type	Pivot-ball	Not incl.	Foam	\$369	04/03
OFNA LD3 Pro	2.7mm	Shaft	Gear	CV type	Clutch type	Pivot-ball	300M	Rubber	\$299/\$399	11/03
Schumacher Fusion R12	3mm	2-belt	Ball	CV type	Finger type	Wishbone	Not incl.	Rubber	\$329	06/03

Partial list; category is too large to list all competitive vehicles. *Price varies with dealer.



SPECIFICATIONS

MANUFACTURER OFNA

MODEL LD3 Pro

SCALE $\frac{1}{10}$

PRICE \$299 without engine; \$399

with Picco .12 XP-R engine

Price varies with dealer

DIMENSIONS

Wheelbase 10.43 (265mm)

Width 7.75 to 7.87 in. (197 to 200mm)

Length 14.88 in. (378mm)

WEIGHT

Total as tested 65.25 oz.
(1,840g)

CHASSIS

Type Double-deck plate

Material 2.7mm, hard-coated aluminum/plastic

DRIVE TRAIN

Type Shaft-driven 4WD

Primary 16/20T clutch bell;

38/42T spur gears

Transmission ratio 2.5:1

Final drive ratio 6.56:1 (first gear); 4.75:1 (second gear)

Drive shafts CVA type

Differentials Bevel gear plus

one-way front pulley option

Bearing type Rubber-sealed bearings

SUSPENSION

Type Upper and lower suspension arms

Shocks Threaded-aluminum bodies

WHEELS

Type One-piece plastic mesh

TIRES

Type (Rubber-treaded tires with foam inserts

ENGINE AND ENGINE ACCESSORIES

Engine OFNA/Picco .12 XP-R

Carb 2-needle, composite slide

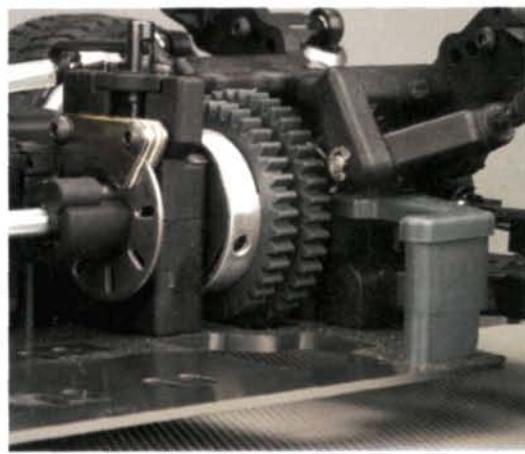
Exhaust One-piece, polished-aluminum manifold and dual-chamber tuned pipe

Fuel capacity 75cc



Left: adjustable ball-and-cup-type front and rear swaybars are standard with the Pro as are shiny steel CV-type axles. The threaded-body aluminum shocks are ultrasmooth and easy to adjust.

Right: a shoe-type 2-speed system shifts smoothly and holds on to the shift-point settings without requiring frequent adjustment. The steel brake rotor is vented, and the calipers have fiber brake pads for consistent stopping power.



TRACK TEST OFNA LD3 PRO

BODY, WHEELS AND TIRES. The LD3 Pro comes equipped with an OFNA 330M "semi painted" body. The body has cool-looking flame graphics printed on the front, and the rest of it is clear, so you can finish it in any color you want—cool! It took just a blast of Pactra Bright Red Lexan spray paint to finish off the 5-color body that's featured in the action shots.

Window masks, decals, and overspray film are also included.

The LD3 Pro rolls on medium-compound rubber-treaded tires with foam inserts on white split-spoke wheels. These aren't ideal for racing, but they're great to use for engine break-in, and they grip well on unprepared surfaces.

PERFORMANCE

After engine break-in and fine-tuning the carb, I took the Pro for a few hot laps on the street in front of my house. I was immediately impressed with how hard and straight it accelerated. The Pro lit up all four tires when it was launched off the line, and it tracked as straight as an arrow whenever I grabbed a handful of throttle. I noticed, however, that the 2-speed tranny shifted a bit late, which caused the engine to wind out excessively. After a minor shift-point adjustment, the Pro tore up my street again with a properly adjusted 2-speed.

The soft suspension combined with the medium-compound treaded tires seemed ideal for the dusty, dirty running conditions. I was able to turn in hard, send the car into a slide and then maintain the drift by feeding in just the right amount of throttle. After dozens of high-speed passes and countless drifts into the corners, I had worn the treaded tires down to slicks. Surprisingly, they continued to provide exceptional traction and were good for several more tanks of fun.

I headed to Revelation Raceway in Montclair, CA, to test the Pro properly. I swapped the treaded rubber tires for a set of Arrows foams. The Arrows foam tires provided the necessary grip to carve some fast laps. After a couple of preliminary runs to get used to the track—and the car—I found the fastest line and attempted to keep the Pro right in the groove. The Pro didn't wander too far off as I picked up the pace, but the rear end felt loose and was hard to control when I came out of the corners under power. I adjusted my transmitter's steering dual rate for less steering throw and added some negative exponential for less sensitive steering around the neutral area. These adjustments helped quite a bit—and probably lowered my lap times—but the car just didn't feel 100 percent to me, so I pulled it off the track and headed to the pits.

To dial in more rear traction, I sauced the rear tires with traction compound. I also added more tension to the front ball-and-cup swaybar by rotating each blade upward 30 degrees. These minor adjustments made the car easier to drive. I was able to carry more speed into and through the corners, and the rear end felt more planted. Unfortunately, traction compound causes the tires to wear faster, and the traction disappears after a few minutes of racing. With the right spring, oil and suspension setup, however, I'm sure I could dial in the Pro to the point where traction compound would be unnecessary.

THE VERDICT

Using the box-stock setup, I was able to get the LD3 Pro around the fast and technical Revelation Raceway track at an impressive clip. With a little suspension and diff tuning, handling is sure to improve even further. I'm certain that I could get the Pro dialed in to where I'm just as fast with it as I am with my weekly racer; in fact, I plan to take up my own challenge by racing the LD3 Pro for the rest of the season. If you're in the market for a pro-level nitro touring chassis, do yourself a favor and add the LD3 Pro to your must-see list; this car rocks!

LIKES

- > Threaded-body aluminum shocks.
- > Awesome one-piece manifold and tuned pipe.
- > Two-box, nylon carrying bag included.

DISLIKES

- > Instructions could use more setup information.
- > Some of the suspension pieces require hand-fitting.

TEST GEAR

OFNA/Picco

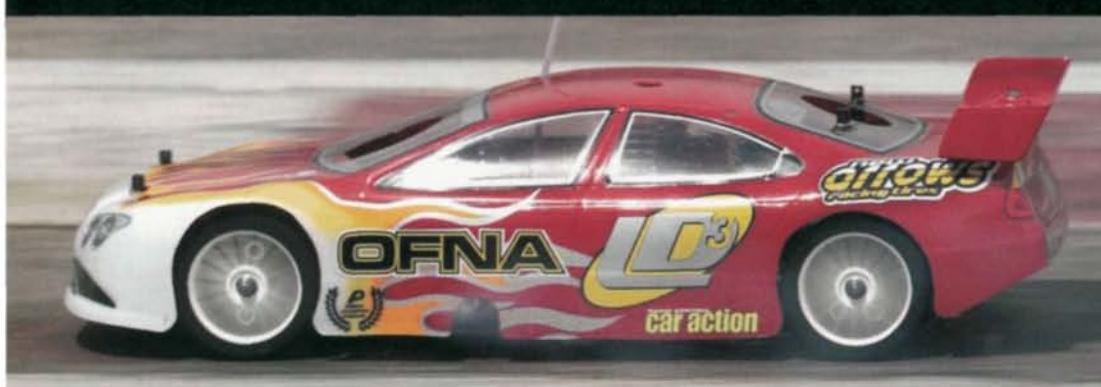
.12 XP-R engine

This 3-port, rear-exhaust, ROAR-legal engine gives the LD3 rocket-like acceleration and seemingly endless rpm. The .12 XP-R features a composite, 2-needle slide carburetor, ABC construction and a two-piece cooling head. Claimed power output is over 1hp—definitely noticeable on the track.



Additional items used to complete the LD3 Pro:

- OFNA Multi Starter box**
- Airtronics MX-3 transmitter**
- Airtronics 94755 and 94737 steering servos**
- Novak XXtra FM receiver**
- MDP 6V 1200mAh receiver battery pack**
- Sidewinder 20% racing fuel**
- Arrows 26mm G compound/45-shore front, 30mm F compound/42-shore rear foam tires**



RATING THE OFNA LD3 PRO

	POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
INSTRUCTIONS					
PARTS FIT AND FINISH					
CORNERING ABILITY					
ACCELERATION					
DURABILITY					

SOURCES

AIRTRONICS (714) 978-1895; airtronics.net.

ARROWS; distributed by GS Racing (626) 338-3815; generalsilicones.com.

NOVAK (949) 833-8873; teamnovak.com.

OFNA (949) 586-2910; ofna.com.

SIDEWINDER FUELS; distributed by Morgan Fuel (334) 347-3525; morganfuel.com.

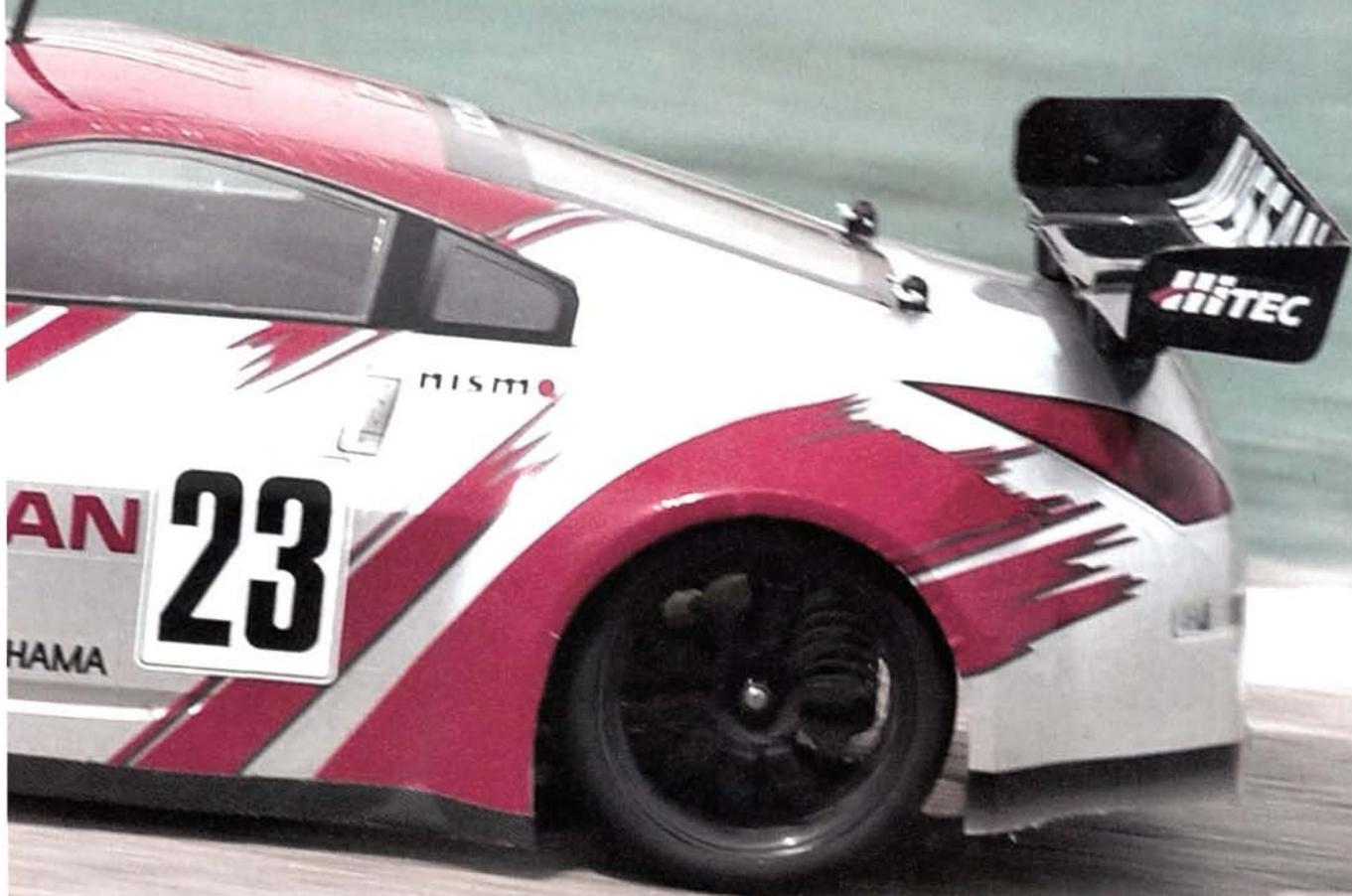
* Top speed varies with equipment used.



HPI Super RS4

WHAT DO YOU GET WHEN YOU COMBINE HPI's race-proven, RS4 Sport dual-belt electric drive train with the Super Nitro RS4 suspension? An $\frac{1}{8}$ -scale electric Super RS4 that's more than 20-percent larger than the typical $\frac{1}{10}$ -scale touring car. The Super RS4's size allows it to run over cracks, bumps and other road imperfections without losing its composure, and its larger "footprint" makes it much easier to drive on slippery surfaces. The best part, however, is that the Super RS4 chassis will accommodate the many available body shells designed for the Super Nitro RS4. The first kits to leave the factory will include sweet Nissan 350Z Nismo body shells just like the one featured on these pages, but kits with Porsche 911 Turbo and Lamborghini Murcielago bodies are now available as well.

grade-A
GT-R



KIT FEATURES

CHASSIS. The Super RS4's double-deck chassis looks a lot like the 1/10-scale RS4 Sport chassis, only it's much longer and wider. The lower chassis plate has eight battery slots (4 on each side of the chassis) to allow you to tape loose cells directly onto the chassis, or you can use the optional, molded battery retainers (as I did) to mount 6- or 7-cell flat stick packs or seven loose cells side-by-side. The lower chassis plate is extra roomy and can easily accommodate a giant, reversing ESC and a standard-size receiver with plenty of room to spare.

The narrow upper deck provides plenty of fore and aft rigidity, but the chassis has a considerable amount of torsional flex. The chassis flex might help the tires find traction when you run the car on slippery surfaces, but it will work against the suspension when it's raced on high-bite tracks. I'm sure that HPI will release an optional graphite chassis for hardcore racers.

DRIVE TRAIN. A dual-belt drive train spins the front and rear bevel-gear differentials. The front and rear diff pulleys (39-tooth) are the same bullet-proof units that are used on the Super Nitro RS4, so they should hold up well under electric power. Molded 15-tooth pulleys mounted on the center layshaft spin the front and rear drive belts and provide a low, 2.6:1 internal gear ratio. The 81-tooth, 48-pitch spur gear and 34-tooth pinion gear provided in the kit yield a 2.38:1 pinion/spur ratio and a 6.19:1 final ratio that's ideal for competition stock motors or mild mods.

The bevel-gear differentials aren't sealed with O-rings or gaskets, so they can't be filled with silicone fluid, but a tension spring installed on the gear shaft between the internal spider gears slows down the front diff action. The grease that comes with the kit ensures that the diffs operate smoothly. Steel dogbones transfer power from the diffs to the wheels. The entire drive train—including the axles—spins smoothly on ball bearings.

SUSPENSION AND STEERING. The Super RS4 uses the same suspension as its nitro sibling does. Up front, extra-long upper and lower suspension arms pivot on steel screw pins. An aluminum hinge-pin brace reinforces the front suspension. Front "C" carriers for two caster angle options (8 and 10 degrees) are included. The kit also includes 1- and 2-degree rear hub carriers to broaden its tuning capabilities. Front camber is adjustable, but turnbuckles aren't included, so you have to remove the upper link to make adjustments. Molded steering and rear camber links speed up the assembly process, but they limit the vehicle's "tunability" because they don't allow front toe-angle or rear camber adjustment. Suspension droop holes molded into the suspension arms are provided, but the kit does not include the setscrews that are necessary to adjust suspension arm droop.

Plastic-body, coil-over shocks provide the damping. These are the same O-ring sealed units with self-bleeding caps that are used on many other HPI vehicles. The shocks include black, medium-tension springs that are attached to thick, molded shock towers. Green, petroleum-based shock fluid of an unspecified weight is provided, but I filled all four shocks with Trinity 60WT silicone shock fluid instead. A dual bellcrank steering system (with a wire drag link and built-in adjustable servo-saver) points the front tires in the direction that you want the car to go.

BODY, WHEELS AND TIRES. The Super RS4 can be set up in either 280 or 300mm wheelbase configurations to accommodate all of the body shells available for the Super Nitro RS4. The included 300mm-wheelbase, Nissan 350Z Nismo body lives up to the HPI's usual high standards and has incredible detail. Separate front headlight buckets make it look more realistic, and the large rear wing looks great and provides plenty of downforce. Window masks and overspray film are included to simplify the painting process, and pre-cut decals speed up the detailing. The BBS-style, black nylon mesh wheels are rigid, and soft-compound, belted slicks with foam inserts are also included and should provide decent traction on a variety of surfaces.

Gear down for brushless power



The Super RS4's 6.19:1 final gear ratio is too tall for the Novak Super Sport brushless motor system. The instructions

included with the Super Sport recommend that you run a final gear ratio between 7.3:1 and 6.5:1, but these recommendations are for 1/10-scale touring cars with small tires that are powered by 6 cells. The Super RS4's tires are considerably taller than standard 1/10-scale touring car tires, and I ran it on 7 cells. A much lower gear ratio is required to prevent overheating the electronics. I replaced the included 34-tooth pinion gear with a smaller 28-tooth gear (which happens to be the smallest pinion gear that will fit in the car). It lowered the final gear ratio to 7.52:1—a better starting point.

After the first test run, the ESC, motor and battery pack were a little hot, so I decided to gear down even further. Unfortunately, the motor mount will not accept a smaller pinion gear, so I replaced the stock, 81-tooth spur gear with an 84-tooth unit. The car is now rolling on a 7.8:1 final gear ratio (which is lower than the previous 7.52:1 ratio). With the lower gearing, the car exhibited the proper balance of acceleration and top speed, and the electronics ran much cooler too.

BUILDING & SETUP TIPS

The Super RS4 instruction manual does a great job of getting you through the assembly process, and anyone who has built a 4WD electric touring car won't have problems assembling the Super RS4. Here are a few tips to make the building process go even more smoothly.

STEP 1 (P. 7) The front diff has a tension spring on the gear shaft between the two internal spider gears to slow down the diff action. The rear diff does not have a tension spring. After they're built, you won't be able to tell the difference between the front and rear diffs. Mark an "X" on the front diff case so you will be able to distinguish it from the rear diff; make sure that you install the diff with the tension spring in front.

STEP 9 (P. 11) Do not over tighten the 3x15mm self-tapping screws that secure the rear upper links to the hub carriers. The plastic ball pressed inside the end of the camber link can be easily compressed if overtightened and will cause binding.

STEP 12 (P. 13) Apply a drop of liquid thread lock to the 3x8mm flat-head machine screws that secure the bellcrank posts to the chassis.

STEP 16 (P. 15) Make sure to install the two O-rings inside the diff outdrive cups or the dogbones will fall out during operation. To reduce wheel chatter, apply a dab of grease to the drive pins before you install the dogbones in the drive cups.

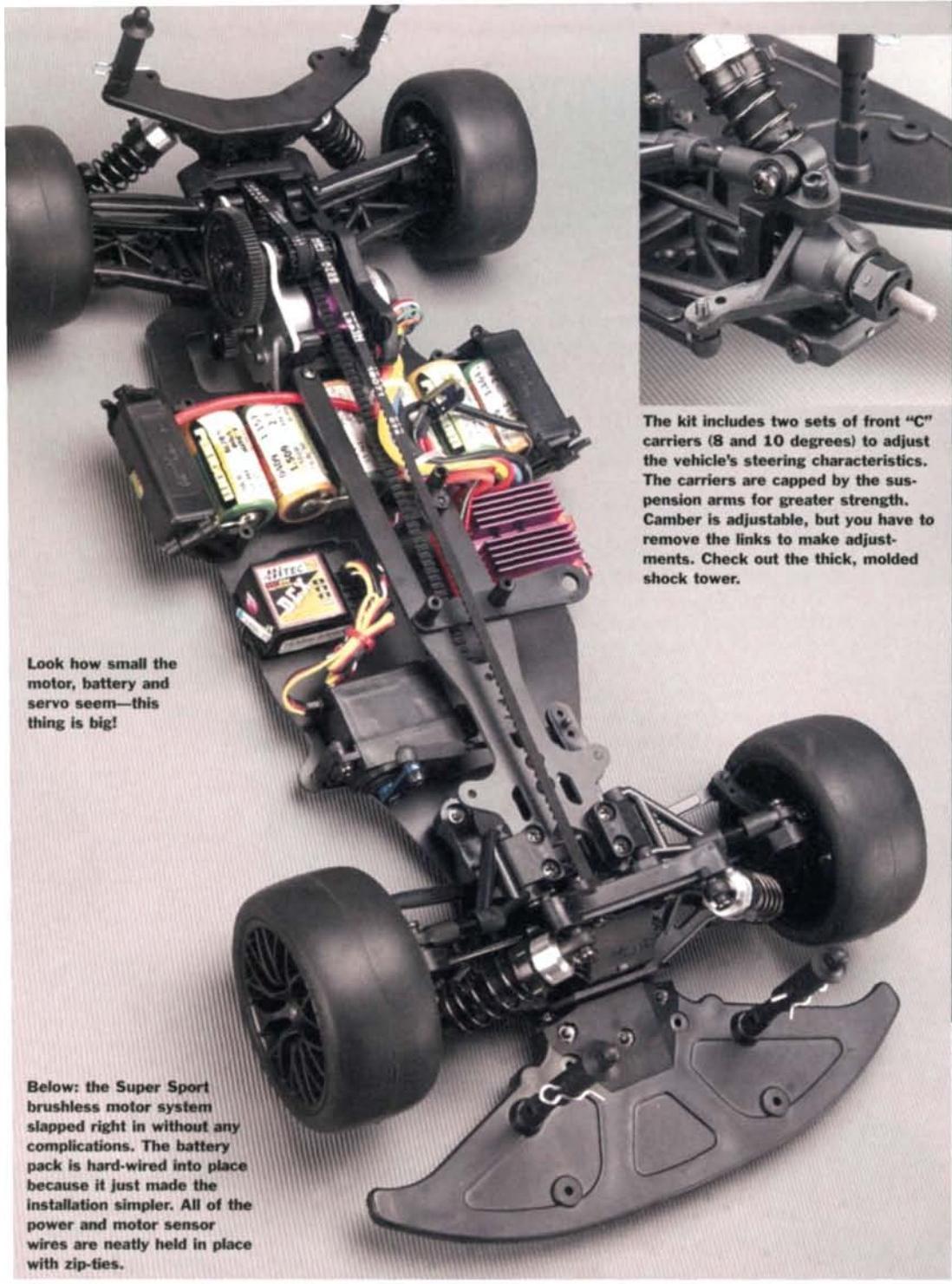
STEP 28 (P. 20) The directions tell you to remove the small alignment tabs from the bottom of the plastic battery pack holders before you install them on the chassis, but if you plan to use a flat, 7-cell stick pack or 7 side-by-side loose cells as I did, you'll need to leave the tabs in place.

you'll need

- Transmitter and receiver
- Steering servo
- ESC
- Motor battery pack
- Battery charger
- Tire glue
- Paint

factory options

- Heat-sink motor plate—item no. A789
- Turnbuckle set—75013
- Threaded aluminum shock kit—72170
- 39-tooth ball diff—A905
- Graphite shock towers (F/R)—73002/73003
- Aluminum center one-way pulley—72037
- Swaybar set—A209



Look how small the motor, battery and servo seem—this thing is big!

Below: the Super Sport brushless motor system slotted right in without any complications. The battery pack is hard-wired into place because it just made the installation simpler. All of the power and motor sensor wires are neatly held in place with zip-ties.



The kit includes two sets of front "C" carriers (8 and 10 degrees) to adjust the vehicle's steering characteristics. The carriers are capped by the suspension arms for greater strength. Camber is adjustable, but you have to remove the links to make adjustments. Check out the thick, molded shock tower.

SPECIFICATIONS

MANUFACTURER HPI

MODEL Super RS4

SCALE $\frac{1}{8}$

PRICE \$250

Price varies with dealer

DIMENSIONS

Wheelbase in. 11.02 or 11.81 in.

(280 or 300mm)

Width (F/R) 8.66/8.77 in.

(220/223mm)

Length 16.92 in. (430mm)

WEIGHT

Total, as tested 67.26 oz.

(1,910g)

CHASSIS

Type Double-deck

Material Fiberglass

DRIVE TRAIN

Type Dual-belt 4WD

Primary Pinion/spur 34/81T

Internal ratio: 2.6:1

Final drive ratio 6.19:1

Drive shafts Dogbones

Differentials Bevel gear

Bearing type Metal- and rubber-sealed ball bearings

SUSPENSION

Type (F/R) Lower and upper suspension arms/lower suspension arms with fixed upper links

Damping Plastic-body, coil-over shocks

WHEELS

Type One-piece, plastic

TIRES

Type Rubber slicks with foam inserts

Below: the plastic-body shocks can be mounted in various positions for precise tuning. The molded camber links can't be adjusted, but they're easily replaced with turn-buckle links. The suspension arms can be flipped around to shorten the wheelbase to 280mm to accommodate the many short wheelbase bodies that are available. The body mounts are also completely adjustable.



PERFORMANCE

I have experience with Novak's Super Sport brushless motor system in 6-cell, $\frac{1}{10}$ -scale touring cars and $\frac{1}{10}$ -scale monster trucks, but I wasn't sure what to expect when I paired the motor with 7 cells and the big Super RS4. The big rig accelerated with minimal wheel spin and continued to gain speed until I ran out of street. The acceleration and top speed seemed right up there with the fastest single-speed nitro sedans that I've driven. This car rips! I wish my nitro sedan had the ultra-smooth throttle response and broad powerband that the Super Sport brushless motor system provides. I was also impressed with the brakes; they felt strong, smooth and consistent.

I was having so much fun making high-speed passes up and down my street that I forgot to test the car's handling characteristics. Before I knew it, more than seven minutes had passed, and the batteries started to go soft. The motor, ESC and battery pack were all too hot to touch after the run—190 degrees according to my temperature probe. This confirmed that the car was overgeared, but I was surprised that the brushless motor system did not go into thermal shutdown. After I adjusted the gearing and allowed the electronics to cool down, I went back out for more (see the "Gear down for brushless power" sidebar).

The Super RS4 was noticeably quicker off the line, but the gear swap didn't seem to affect the vehicle's top speed. I set up a few corner markers to test the car's handling. The Super RS4 scrubbed a lot of speed when it entered the corners under power, but if I let off the throttle and then quickly got back on the gas, it turned-in harder. A tendency to oversteer when it exited the corners required careful throttle input to prevent the chassis from swapping ends. After a couple of laps, however, I had the car's handling down, and I was burning up the course with little difficulty.

A large metal drainage cap in the middle of my street is an obstacle when I run smaller $\frac{1}{10}$ -scale sedans, but the Super RS4 ran over the cap at full speed without it even disrupting the car's suspension. After more than nine minutes of high-speed fun, the batteries started to dump—an excellent run time in my book. The electronics were much cooler after the second run; that indicated the car was geared correctly.

THE VERDICT

Because of its larger size and bigger footprint, the Super RS4 can handle more power, and it's much easier to drive than a typical $\frac{1}{10}$ -scale sedan. Bumps and other road imperfections hardly affect the vehicle's composure, and its larger size makes it look more realistic. The chassis is extra roomy and can accommodate a variety of electronics and a multitude of batteries (making it a great subject for an insane speed project). I had a blast testing the HPI Super RS4 and can't wait to race it. This car is sure to blow a lot of minds when unsuspecting nitro sedan racers spot it at the track.



RATING THE HPI SUPER RS4

	POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
INSTRUCTIONS					
PARTS FIT & FINISH					
ACCELERATION					
CORNERING ABILITY					
DURABILITY					

Not a lot of step-by-step guidance, but great CAD drawings and setup information are included.

Overall parts fit is very good, but you have to carefully trim flashing from some of the tree-mounted parts.

With its wide footprint and steamroller tires, the Super RS4 can put a lot of power on the pavement.

Handles well with the box-stock setup but has a tendency to oversteer when it exits corners.

HPI's electric Super car is just as rugged as its nitro counterpart—just keep pebbles away from the drive belts.

RADAR TESTED TOP SPEED

87.8 MPH*

BEST BUYER

All electric-power, on-road RC enthusiasts

* Top speed varies with equipment used.

LIKES

- > Beautiful 350Z body with pre-cut decals.
- > Nitro performance potential in an electric package.
- > Handles bumpy surfaces better than $\frac{1}{10}$ -scale sedans.

DISLIKES

- > Fixed-length steering and rear camber links limit adjustability.

TEST GEAR



Hitec CRX

The CRX is Hitec's top-of-the-line 3-channel computer radio system, and it's loaded with features that make setting up and operating the Super RS4 a pleasure. A large LCD screen and menus that are easy to navigate simplify programming, and the digital trim levers are all easy to access while you're driving. Twenty-model memory, endpoint adjustment (EPA), exponential, steering and throttle subtrim, steering dual rate and anti-lock brakes are only a few examples of the CRX's many features. I also used the included DCX 3-channel, dual-conversion FM receiver.

Additional items used to complete the HPI Super RS4

Novak Super Sport Brushless motor system

Novak Ionic charger

Hitec HS-525MG high-speed steering servo

Fantom GP 3300 NiMH 7-cell, matched battery pack

SOURCES

FANTOM RACING (269) 649-9583; fantom-motors.com.

HITEC RCD INC. (858) 748-6948; hitecrcd.com.

HPI RACING (949) 753-1099; hpiracing.com.

NOVAK ELECTRONICS INC. (949) 833-8873; teamnovak.com.

TRINITY PRODUCTS INC. (732) 635-1600; teamtrinity.com.

Monster BLOCK Engine Guide

by Steve Pond

BIGGER THAN BIG-BLOCKS

It wasn't too long ago that RC had only .12-size engines for small-blocks. That's the maximum displacement allowed by race-sponsoring organizations in the U.S. and abroad, so for a while, no one even considered making a larger-displacement small-block engine. As soon as it became clear that the power-hungry enthusiasts who were not bound by racing rules had an appetite for the larger-than-legal engines, the nitro landscape was flooded with .15 to .18 small-blocks. They're now the most popular engine sizes.

It wasn't until the XTM 24.7 engine was released that the same phenomenon occurred in the big-block market, and now the advent of the "monster-block" is clearly upon us. Many manufacturers produce larger-than-legal big-block engines, and the appetite for them has never been greater. This guide showcases the field of monster-block mills for all the power-hungry enthusiasts who want "stomp-your-buddy-into-a-mudhole" kind of power.



SIRIO S27S



These are the biggest of the big-blocks. Tipping the scales at a claimed .27ci (4.40cc), the Sirio monster-block engines are the kings of displacement. Sirio's primary purpose is to build competition engines, but in this line of monster Outlaws, the engineers have lent their considerable expertise to these massive, non-racing mills. This 3-port sport version is factory rated as the most powerful of its type, not including the 7+3-port Race/Pro version of the S27.



Distributor: Trinity Products Inc.

Bore: 17.9mm

Stroke: 17.5mm

Transfer ports: 3

Piston/sleeve construction: ABC

Crankshaft: SG-type

Carburetor: 8mm,

3-needle composite carb

w/interchangeable venturis

Cylinder head: two-piece with inserts for both standard and turbo plugs

Claimed power output: 2.9hp

Price: \$335

Distributor: Trinity Products Inc.

Bore: 17.9mm

Stroke: 17.5mm

Transfer ports: 7, plus 3 exhaust

Piston/sleeve construction: ABC

Crankshaft: SG-type

Carburetor: 8mm, 3-needle

composite carb
w/interchangeable venturis

Cylinder head: two-piece with inserts for both standard and turbo plugs

Claimed power output: 3.1hp

Price: \$399, \$379 (w/o pull-starter)



SIRIO S27RACER/S27PRO



The Racer and Pro versions of the S27 redefine big-block horsepower. Factory rated at 3.1hp, these engines should be the kings of the hill in the monster-block category. Seven transfer/boost ports and a 3-port exhaust optimize the flow of air and fuel into and out of the engine, which produces more power. The only difference between the Racer and the Pro is the addition of a pull-starter on the former. This engine features two head inserts, and that allows the use of a standard or turbo glow plug.

WHAT IS A MONSTER-BLOCK ENGINE?

The .21 (3.5cc) engines have been around for quite some time. Manufacturers of large-displacement powerplants have settled on certain critical dimensions such as engine-mounting-hole spacing and crankshaft and engine-block dimensions. This allows the engines to fit into just about any car or truck that's designed to use a big-block. The monster-blocks usually have the same outer dimensions as the legal-for-racing .21s, but to increase displacement, they use a larger bore or a longer stroke—or both.



dynamite MACH .26



The "Mach" series started with a bang in the small-block segment powering Losi's Triple-XNT RTR truck, and the Mach .16 proved to be a powerful and reliable sport engine. Dynamite's new .26 is the first big-block to carry the "Mach" name, and it's built to uphold the "Mach" reputation.



Distributor: Horizon Hobby

Bore: 18mm

Stroke: 16.75mm

Transfer ports: 6

Piston/sleeve construction: ABC

Crankshaft: SG-type or standard threaded

Carburetor: 8mm, 2-needle, aluminum slide carb

Cylinder head: two-piece; designed for standard glow plugs

Claimed power output: 2.75hp

Price: \$129 (w/o pull-starter); \$139 (w/pull-starter)

OFNA/PICCO .26 outlaw



Manufactured by Picco, these OFNA/Picco engines have been strong contenders in the horsepower wars for both small- and big-block engines. The newest .26 Outlaw is the largest mill to bear the OFNA/Picco name, and it's one of the latest generation of monster mills.



Distributor: OFNA

Bore: 18mm

Stroke: 16.75mm

Transfer ports: 5+2

Piston/sleeve construction: ABC

Crankshaft: SG-type

Carburetor: 8mm, 2-needle

composite slide carb w/interchangeable venturis

Cylinder head: two-piece designed for standard plugs

Claimed power output: 2.7hp

Price: \$157 (w/o pull-starter); \$189 (w/pull-starter)

Two predominant crank types are available for most big-block engines: standard threaded and SG-type. A standard threaded crank has a threaded tip to which a flywheel, pilot shaft and clutch assembly are attached. SG-type cranks use a nut to attach the flywheel to the crankshaft, and the pilot shaft is actually part of the crankshaft. The pilot shaft is the smooth, unthreaded section at the tip of the crankshaft that you'll see on some of the engines in this guide. The advantage of the SG design is that because the pilot shaft is

integrated, it runs more "true" than a bolt-on pilot shaft, so there's less potential for power-robbing vibrations from the clutch assembly.

Which style should you choose? Some vehicles come from the factory with the hardware needed for a specific crankshaft type, so for easier installation, it's best to stick with the crank type intended for your application. If you have the hardware for both, the SG-type crankshaft is the better choice.

GETTING CRANKY

OFNA .25



An OFNA Force .25 serves duty as the standard engine in the Titan Deluxe monster truck, and it is an option engine for many others. The Force line offers the monster-block enthusiast a sport engine with good power for a reasonable price.

OFNA FORCE .26



The newest addition to the OFNA/Force monster-block lineup is the new .26 engine. The .26 is very similar to the .25 engine with a slightly longer stroke, bumping the displacement to .26 cubic inch, which creates a little more axle-twisting power for power-hungry big-block enthusiasts.



Distributor: OFNA
Bore: 18mm
Stroke: 16mm
Transfer ports: 4
Piston/sleeve construction: ABC
Crankshaft: SG-type
Carburetor: 8mm, 2-needle

aluminum slide carb
Cylinder head: two-piece; designed for standard glow plugs
Claimed power output: 2.39hp
Price: \$135

Distributor: OFNA
Bore: 18mm
Stroke: 16.5mm
Transfer ports: 4
Piston/sleeve construction: ABC
Crankshaft: SG-type
Carburetor: 8mm, 2-needle

aluminum slide carb
Cylinder head: two-piece; designed for standard glow plugs
Claimed power output: 2.41hp
Price: \$135



The SG-type crank (far left) features an integrated pilot shaft that reduces the power-robbing vibration that can occur with a bolt-on pilot shaft.

HTM RACING 24.7 and 24.7 PRO



XTM fired the first shot in the big-block displacement wars with the introduction of its 24.7, which is actually a .247ci engine. The 24.7 is available as an aftermarket engine for any application that fits a standard big-block, and it's now available in a Standard and a Pro version.



Distributor: Global Hobby Distributors

Bore: 17.5mm

Stroke: 16.75mm

Transfer ports: 5

Piston/sleeve construction: ABC

Crankshaft: Standard version, threaded or SG-type/

Pro version, SG-type only

Carburetor: 8mm; 2-needle aluminum slide carb

Cylinder head: 2-piece; designed for standard glow plugs

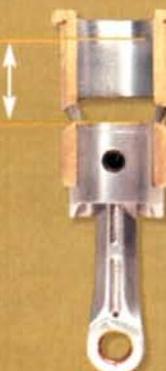
Claimed power output: 2.6hp/2.75hp

Price: \$129/\$189

WHAT IS DISPLACEMENT?

Displacement is the swept volume of a cylinder. Just as a 1-liter bottle holds 1 liter of fluid, so a 3.5cc engine holds 3.5cc of air/fuel mixture in the area of the cylinder that's between the highest and lowest points of piston travel. Imagine that the cylinder is like the tube of a syringe. When you push the plunger in the syringe, it displaces air or fluid in much the same way as a piston displaces the air/fuel mixture when it moves upward in the cylinder.

By itself, displacement doesn't make one engine more powerful than another. There are many elements, the least of which can be displacement, that are responsible for making power. Compression, port volume, timing and other elements factor into



the overall performance picture, and many smaller-displacement engines are significantly more powerful than larger ones because all of the other elements are better suited to producing power. There's a good chance that a larger displacement engine will make more power, but it isn't always guaranteed.

Engine displacement is the volume of the cylinder above the piston between the top and bottom of the stroke. Think of it as the volume of air that's displaced when the piston moves from the very bottom of its stroke to the very top of its stroke.

TEAM ORION .26



Under the Wasp banner, Team Orion offers a premier engine line that now includes a monster-block. The Italian-made Wasp powerplants were previously available only as small-blocks, but this new mill clearly vaults them into the monster-block ranks.

HPI RACING NITRO STAR S-25



HPI recently jumped into the monster truck market with its big-block-powered Savage 21. The latest versions of the Savage, the high-performance SS kit and the RTR Savage 25 are powered by this Nitro Star S-25 engine. The S-25 is available for installation in any truck or buggy that was built to carry a .21 engine.



Distributor: Team Orion

Bore: 18mm

Stroke: 16.75mm

Transfer ports: 5 + 2

Piston/sleeve construction: ABC

Crankshaft: SG-type

Carburetor: 8mm, 2-needle

composite slide carb w/interchangeable venturis

Cylinder head: two-piece; designed for standard glow plugs

Claimed power output: 2.7hp

Price: \$169 (w/o pull-starter); \$199 (w/pull-starter)

Distributor: HPI Racing

Bore: 18mm

Stroke: 16.5mm

Transfer ports: 4

Piston/sleeve construction: ABC

Crankshaft: SG-type

Carburetor: 7mm, 2-needle

composite slide carb

Cylinder head: two-piece

Claimed power output: 2.5hp

Price: \$139 w/pull-starter

SOURCES

DYNAMITE distributed by Horizon Hobby
(800) 338-4639; dynamiterc.com.

GLOBAL HOBBY (714) 964-0827;
globalhobby.com.

HPI RACING (949) 753-1099;
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(732) 635-1600; teamtrinity.com.

XTM RACING distributed by Global Hobby Distributors; xtm.globalhobby.com.

X-TRA SMALL TRIPLE-XT

by John Howell

Here's the Mini-T posed next to a "full size" Triple-XT. It looks small enough to run inside, but big enough for the dirt.



TEAM LOSI MINI-T

features with its $\frac{1}{10}$ -scale counterpart. The Mini-T doesn't just cop off-road style, it's a genuine dirt-going, full-suspension, racing-type design—see for yourself.

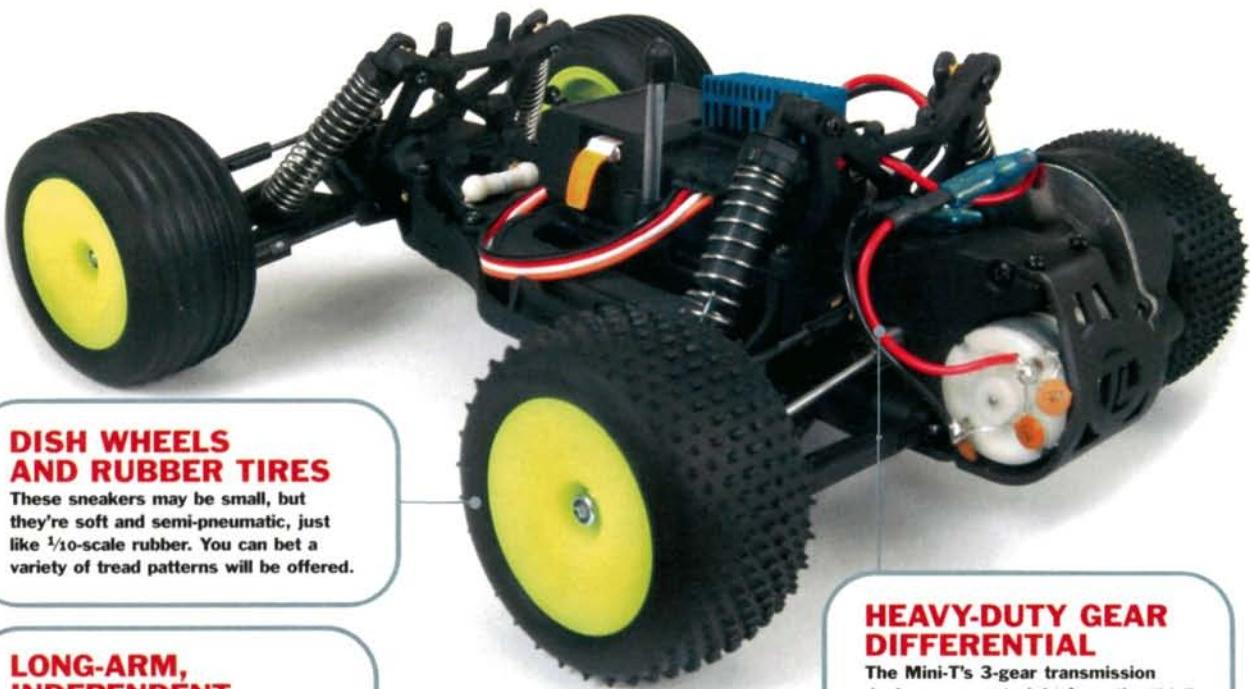
WHEN THE MINI AND MICRO CRAZE HIT

a while back, it brought us a variety of road-going machines. Unfortunately, no one offered anything for the high-performance off-road crowd ... until now! Team Losi is set to shock the world with the release of its groundbreaking Mini-T. Based on the very successful Triple-XT electric race truck, the ready-to-run, $\frac{1}{18}$ -scale machine shares many



FACTORY-FINISHED LEXAN BODY

The Mini-T is topped off with a modified, scaled-down version of Losi's racy-looking Fury stadium-truck body. The Mini-T will be available in three colors with cool graphics and decals already applied.



DISH WHEELS AND RUBBER TIRES

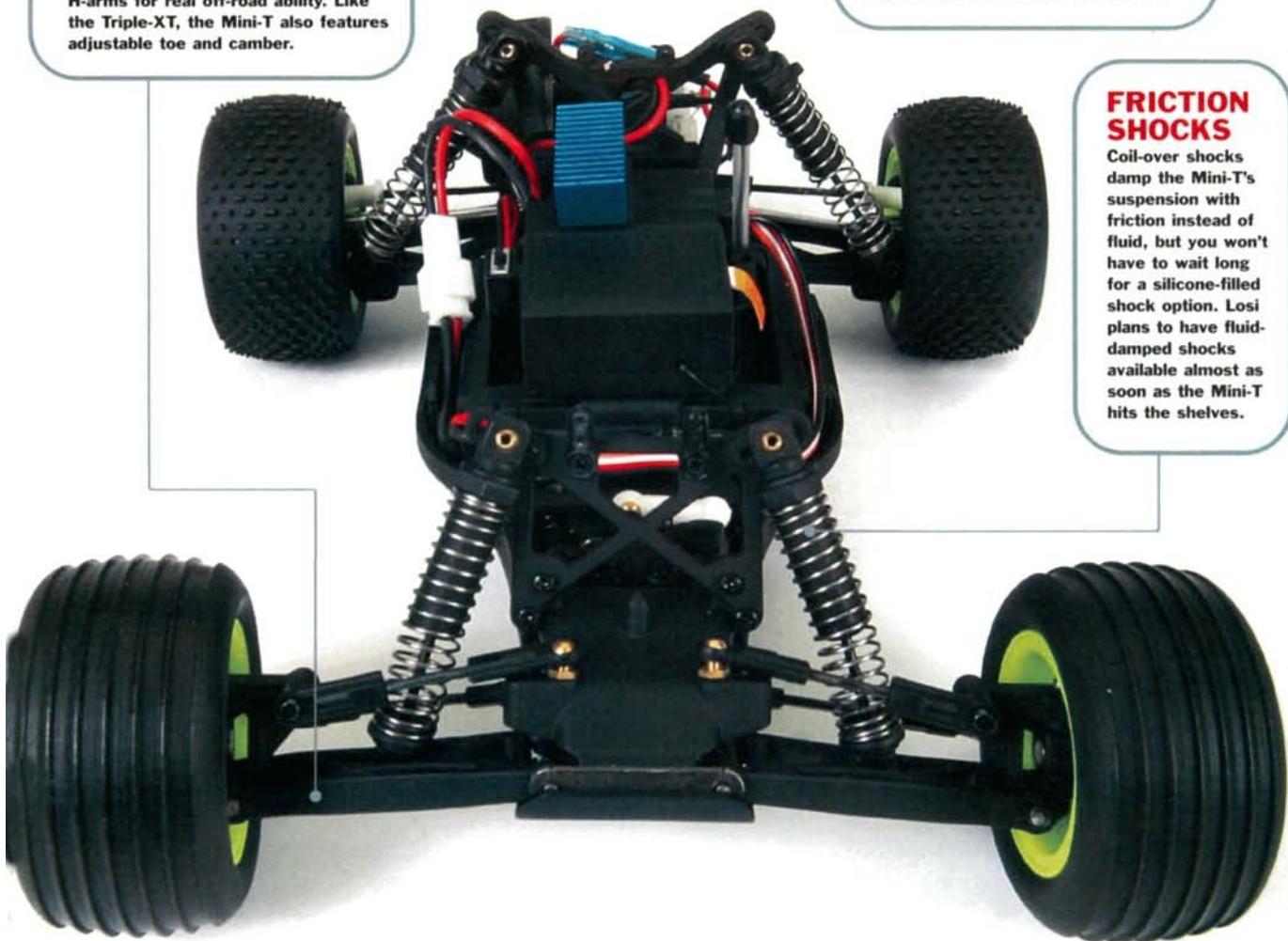
These sneakers may be small, but they're soft and semi-pneumatic, just like 1/10-scale rubber. You can bet a variety of tread patterns will be offered.

LONG-ARM, INDEPENDENT SUSPENSION

No solid-axle pods here; the Mini-T's chassis floats between independent H-arms for real off-road ability. Like the Triple-XT, the Mini-T also features adjustable toe and camber.

HEAVY-DUTY GEAR DIFFERENTIAL

The Mini-T's 3-gear transmission design comes straight from the "big" XT, but it uses a no-maintenance gear differential instead of a ball-type unit. The transmission spins on ball bearings to boot; this is a serious truck!



FRICITION SHOCKS

Coil-over shocks damp the Mini-T's suspension with friction instead of fluid, but you won't have to wait long for a silicone-filled shock option. Losi plans to have fluid-damped shocks available almost as soon as the Mini-T hits the shelves.

sneak peek

ALKALINE OR RECHARGEABLE POWER

You can run the Mini-T on 4, AA alkaline cells for run times of 45 minutes, or for more performance, an optional 6-cell, rechargeable Ni-Cd pack will be available. Run time will drop with the Ni-Cd pack, but it will still seem eternal when compared with the five-minute runs we're used to with 1/10 scale. But we're told the real benefit of the 6-cell pack is that it makes the truck just flat-out scream! According to our source at Team Losi, the included motor provides plenty of get-up-and-go. "The truck moves out like a rat on fire," laughed our insider. With 4 alkaline cells, the truck has an estimated top speed of 15mph, but the optional 6-cell pack propels the vehicle to speeds of 20mph plus!

TEAM LOSI MINI-T



FULL-SIZE TRANSMITTER

The Mini-T won't make do with a mini transmitter. Instead, a full-size radio sends signals to a receiver/ESC combo unit (although packaged together, the electronics are separate items) and a standard steering servo. The radio is a fully proportional 27MHz system with servo-reversing, adjustable-rate steering and changeable crystals. That means a bunch of Mini-Ts can race at the same time.



LOSI TELLS US that thanks to the Mini-T's real suspension and semi-pneumatic tires, the truck can be run on just about any indoor and outdoor, rough and irregular surfaces. The truck will be right at home on any off-road track, in your backyard, your living room, or just about anywhere else you can imagine.

Are you ready for the best part? According to Team Losi, the Mini-T will land in shops with a price tag of only \$150 or so—and that's for the complete RTR package, including radio gear! Look for a complete review soon.

SOURCES

TEAM LOSI distributed by Horizon Hobby Inc. (909) 390-9534; teamlosi.com.

RACER NEWS

BY THE RC CAR ACTION TEAM

sponsored by

FUSION
BATTERIES
FUSIONBATTERIES.COM



TRINITY SIGNS ON FOR SNOWBIRDS

Team Trinity will be sponsoring the 2003 Snowbird Nationals. The Snowbirds is the only race that features both on-road and oval racing during the same weekend. Last year's race was said to be the biggest RC race ever with its more than 750 entries. Will this year's event be even bigger? To find out, go to snowbirdnationals.com.

BOARD WALK FROM THE RADIOCONTROLZONE .COM BULLETIN BOARD

How can I?

TAYMO2000: My air filter gets very dirty really fast. How can I prevent this?

BOBNITROTC3: Drive somewhere cleaner-like on the street.

JONMAXX: Buy spares and switch them out as needed. I have two or three for each of my cars.

MRCRASH: Use a pre-filter.

My soldering problem.

MUBANDIT: I can't get anything soldered. Every time I bump into something with my truck, the motor leads come off. I use rosin-core solder. What's up?

MRODOVE: Try using little more solder. You should also give it a little yank to test the bond.

ROCKNBLK: You aren't heating the parts you need to solder. The idea is that the wire and the tab must be hot enough to melt the solder. The solder should flow into the heated parts and make a solid bond.

DIZZY: Make sure that the soldering iron's tip is tight.

Is this normal?

LIAPI: My compression is awesome. After running my engine however, I can turn the flywheel over fairly easily. Once it cools down, the compression is awesome again.

BOBNITROTC3: When the engine is hot, the piston sleeve expands and makes the piston move up and down easier. When the engine cools, the sleeve shrinks a little, and that makes a tighter fit. Also, make sure that your piston is at the bottom when it's cooling.

**BE HEARD! LOG ON AT
RADIOCONTROLZONE.COM**

SITE SEEING



techtv.com

Team Associated's Cliff Lett and Torrance DeGuzman recently appeared on the TechTV cable channel, where they showed off their record-setting "insane speed" cars. Missed it? You're in luck; you can download it at techtv.com. Just visit the site and enter "World's fastest RC Car" in the search box, and it will pop right up.



HPI AND HARA WIN ROAR FUEL NATIONALS

They came from all over the country to battle for bragging rights as the fastest nitro on-road racers in the U.S. During qualifying, Josh Cyril TQ'd with his wicked-fast Team Trinity powered G4. Second qualifier (and Cyril's teammate) Mike Dumas also drove a G4; third on the grid was Ron Rossetti with a Mugen MTX-3, but HPI's Atsushi Hara won the day with his R40.

Hara proved that consistency pays off with a brilliant A-main race that put him at the top of the podium. Second place went to Team Associated's Billy Easton who bumped up from the B-main. Cyril took third; he was the race's early leader, but he ran out of fuel before one of his pit stops.



drake wins watermelon classic

Team Trinity/Team Losi driver Adam Drake continues his winning ways; he took home the Watermelon Classic's first-place trophy. Second-place finisher Josh Wheeler piloted a Team Associated Factory Team GT and third-place finisher Shane Ogden ran a Team Losi Triple-XNT.

POPS GOT A WOODIE!

"Pops" Losi, founder of Team Losi, has a thing for tricked-out hot-rods. His latest project, a full-size 1950 Ford Woodie, is one sweet ride. Pops actually built the car for his wife—for cruising around as a daily driver. Mama Losi is one lucky lady. This Woodie isn't quite stock, it has a Chevrolet 350 tuned-port, fuel-injected crate engine mounted under the hood. The custom maple frames are filled with African ribbon-striped mahogany panels. The car also features an ultra-plush air-ride suspension and 18-inch Boyd Coddington custom wheels.



“You know it’s time to quit racing when the microcars are posting faster laps than your 1/10 scale”
—overheard at the Hibec Parking Lot Challenge (look for coverage in the next issue)

SPEED SHOP

OFNA

SNR Centax Clutch Combination Tool

OFNA's new Centax clutch tool allows quick and easy assembly of the clutch gear to the clutch bell. The kit comes with an aluminum jig, a securing pin and the wrench. It even includes setscrews, so you can clamp the wrench to the gear—a very handy design if you need to remove damaged or hard-to-remove gears.

SNR Centax Clutch Combination Tool—item no. 38500; \$40. OFNA Racing (949) 586-2910; ofna.com.



TEAM LOSI

Kevlar gears

According to Team Losi, there has always been a tradeoff in spur gear design; certain compounds that make gears quiet aren't necessarily strong and vice versa. Racers had to choose between quiet gears that were soft and strong gears that made a little noise.

Losi's new composite combines the extreme strength of ballistic-quality Kevlar with a material that uses friction modifiers to offer a strong, yet quiet gear. There are Kevlar gears for all of the Team Losi vehicles, including the Triple-X, Triple-XT, Triple-X4, Triple-XS and the Triple-XNT.

The new spur gears are easy to recognize with their distinctive, light-brown color, and each one is clearly

marked with the number of teeth and the word "Kevlar" on the side.
Team Losi Kevlar Spur Gears—item nos. vary by vehicle and tooth count; \$4 to \$5/each. Team Losi; distributed by Horizon Hobby Inc. (800) 338-4639; teamlosi.com.

XRAY

C-hub conversion kits

If you're looking to upgrade the suspension on your XRAY T1 touring car, these new front and rear C-hub conversion kits are the hot setups and will increase your tuning options. The front conversion kit includes: aluminum steering knuckles and three-degree hub carriers; new front A-arms; a front ultra-tune shock tower; spring steel front drive shafts with aluminum outriders; and spring steel turnbuckles with rod ends. The rear C-hub conversion kit includes: aluminum rear hubs; a rear H-arm; adjustable toe-in suspension mounts; and spring steel turnbuckles with rod ends. Both kits come with all of the necessary hardware, complete instructions and a setup sheet.

XRAY C-hub conversion kit (F/R)—XRA300921/XRA300931; \$135/\$50. **XRAY Model Racing Cars**; distributed by Serpent USA (305) 639-9665; teamxray.com.



TEAM ASSOCIATED

Foam PreFilter Treatment

To help keep your engine from sucking in dirt and debris when it's out on the track, you have to keep the foam element on your air filter properly oiled. Team Associated offers this handy, 1-fluid-ounce bottle of Foam PreFilter Treatment that does the trick, and at under \$3 a bottle, it seems like quite a bargain for that kind of insurance for your engine. Your piston and sleeve will thank you. **Team Associated Foam PreFilter Treatment**—#7710; \$2.50. Team Associated (714) 850-9342; rc10.com.



SPEED SHOP



GOLDEN HORIZONS

1/8-scale off-road step-pin tire

Golden Horizons now offers these new step-pin tires for 1/8-scale off-road buggies. The step-pin spikes give you better traction on loamy surfaces than you would get with a standard-pin tire. This general-purpose, medium-firm compound tire gets traction on most loose-pack, sandy, or slick, muddy surfaces.

1/8-scale off-road step pin tire—88028; \$12/pair.

Golden Horizons (604) 331-2526; ghobby.com.

OFNA

Power Clutch kit

OFNA's new, fully adjustable, Power Clutch kit is designed for use in 1/10-scale touring cars equipped with a .12 or .15 SG-type engine. The kit comes with a clutch bell, a flywheel, engine mounts, clutch shoes, springs, necessary hardware and an instruction/tuning sheet.

Power Clutch—38423; \$112

OFNA Racing (949) 586-2910; ofna.com.



PEAK RACING

Stratos R & Thunderbolt S machine-wound modified motors

Both the Stratos R and Thunderbolt S machine-wound motors share components from Peak's Carrera line of hand-wound racing motors. With the exception of its machine-wound armature, the Stratos R is spec'd identically to the Carrera modified and touring motors. It has dual ball bearings, G12 magnets, adjustable timing, a removable endbell and preinstalled surface mount capacitors and bullet connectors.

The Thunderbolt S is geared toward racers looking for speed on a budget. It features a machine-wound, drill-balanced armature, dual bushings, G12 magnets and a fixed endbell with preinstalled surface mount capacitors and bullet connectors.

Peak Racing Stratos R—item nos. vary by wind; \$50.

Peak Racing Thunderbolt S—item nos. vary by wind; \$32.

Peak Racing (714) 692-8533; peakmotors.com.



FANTOM RACING

Reverse Print Team Sticker Kit

For all you Fantom Racing fans, here's a new item to check out when you prep a new body for painting. These new reverse print stickers can be applied to the inside of a clear Lexan body prior to painting. No more peeling stickers flopping in the breeze to distract you—especially when you're focused on winning the A-main! The stickers come eight to a pack with a variety of sizes, shapes, colors and logos in the package.

Fantom Racing Team Sticker Pack Reverse Print—F384; \$11/8 pack.

Fantom Racing (269) 649-9583; fantomracing.com. ■



UNDER THE HOOD

Billy Easton's

Team Associated RC10B4

EQUIPMENT USED

Transmitter: Airtronics M8
Receiver: LRP Phaser
ESC: LRP IPC V7.1
Motor: Reedy KR 10x2
Servo: Airtronics 94359

Battery pack: Reedy Sanyo 3300
Tires (F/R): Losi Taper Pin (silver/red)
Inserts: Pro-Line hard
Gearing: 19T/87T

SETUP

	FRONT	REAR
Caster/anti-squat	Stock 25 deg.	2 deg.
Camber	1 deg. negative	1 deg. negative
Toe-in	0	2 deg.
Ride height	Arms slightly below level	Bones level
Steering block	Trailing	—
Front axle height	Middle position	—
Bump-steer spacer	1 (0.030 in.)	—
Rear ball-stud spacer	—	2 (0.030 in.)
Shock fluid	40WT	30WT
Shock piston	2	1
Shock spring	Silver	Silver
Shock limiters	3	0
Shock-tower mount	2	1
Camber-link mount	1	1
Hub-carrier mount	—	B
Arm mount	0	0
Wheelbase	—	Short
Battery placement	Middle/forward	

FACTORY OPTIONS

- Factory Team Unobtanium shock shafts
- Factory Team titanium turnbuckles



That's a Reedy KR 10-turn, double-wind motor bolted on the motor mount. At the Hot Rod race, Billy's truck pulled wheelies down the straightaway and almost flipped over backward a couple of times when the traction was up. Where's the Schottky diode?

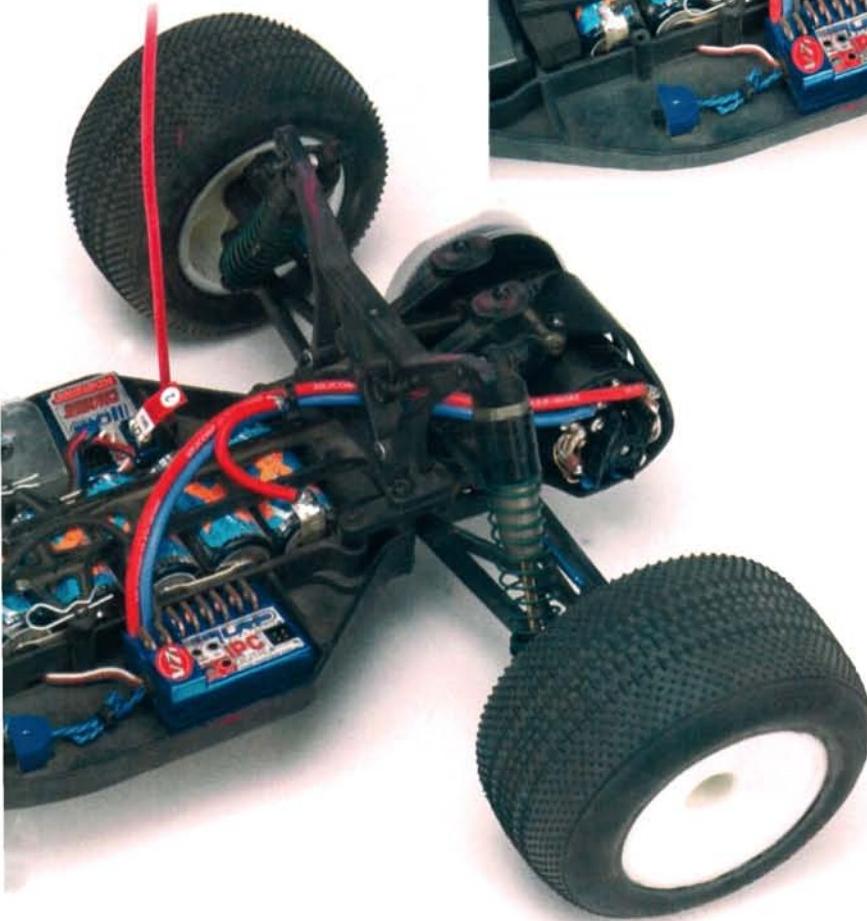


Billy installed a few well-chosen hop-ups before the Hot Rod Hobbies Shootout. The Factory Team blue titanium turnbuckles, Unobtanium shock shafts and the silver front springs are all optional. Those are silver compound Team Losi Taper Pin rear tires installed up front. They provide more steering on hard-packed, blue-groove tracks.

5 QUESTIONS



For off-road racing, Billy prefers the LRP IPC digital V7.1 ESC to the lighter and smaller Quantum. Looks as if he didn't use any of the current-limiter chips. All of the electronics are neatly installed and well balanced on the chassis.



FACTORY DRIVER HOT MOD

Billy made this cool transponder mount out of a piece of scrap Lexan. The mount is secured to the chassis with double-sided tape and the transponder is secured to the mount with a body clip. When attached, the transponder is secured low on the chassis to keep the center of gravity as low as possible.

SOURCES

AIRTRONICS (714) 978-1895; airtronics.net.

LRP; distributed by Team Associated.

REEDY; distributed by Team Associated.

TEAM ASSOCIATED (714) 850-9342; teamassociated.com.

TEAM LOSI; distributed by Horizon Hobby Inc. (800) 338-4639; teamlosi.com.

DRIVER: Billy Easton

AGE: 25

LAST BIG WIN: 6th Annual Hot Rod Hobbies Off-Road Shootout

SPONSORS: Team Associated, Reedy, LRP, Kimbrough, MIP, IRS, Testors and Pro-Line.

WHEN I'M NOT RACING, I'M: either working on my cars (full-size and RC) or hanging out with friends.

RC CAR ACTION: Team Associated engineer Kurt Wenger called Cliff Lett only moments after you passed the checkered flag with your T4 and won the event. What was Cliff's reaction when he found out that four T4s made the A-main and that you had won the race?

BILLY EASTON: Yeah, it was great all right. As you can imagine, Cliff was thrilled with the accomplishment. He asked Kurt to tell the drivers that they did an awesome job.

RCCA: The overall championship was up in the air going into the third (and final) Main. Were you confident that you could pull off the win before the race started?

BE: I was confident going into the race, and I didn't feel any extra tension because I was driving a new truck. The only plan was to get out in front and stay there. Fortunately, my plan worked; I was able to stay in front enough to win the event.

RCCA: Did it take long for you to chase down a setup that you felt comfortable with before the qualifiers, or did you make subtle adjustments to the truck throughout the qualifiers and the Mains?

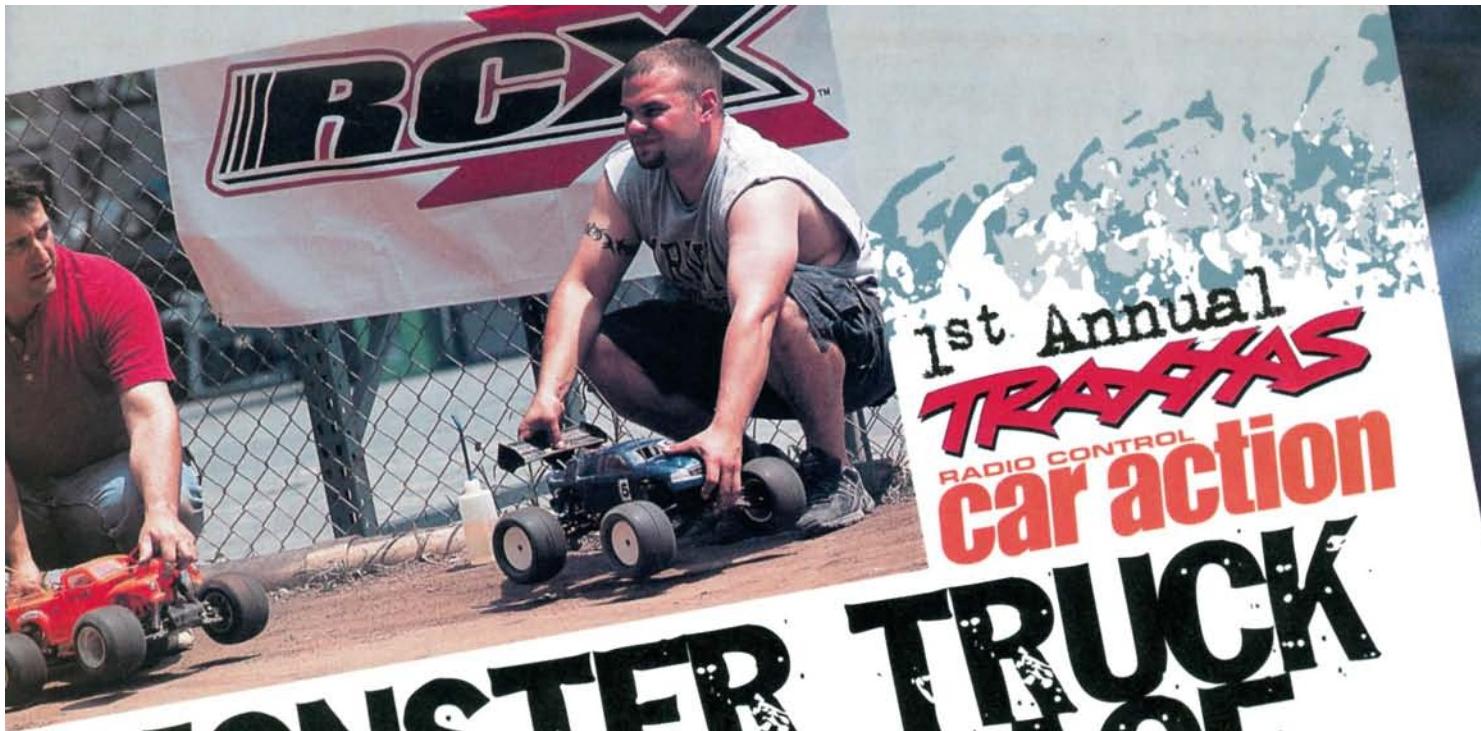
BE: To be honest, I never run the same setup twice. I always change one thing or another in an effort to continue to lower my lap times. By the time the Mains rolled around, my truck was dialed.

RCCA: What are the biggest differences between racing the T3 and T4?

BE: The adjustability factor is the biggest difference. Both trucks are competitive, but the T4 gives me more tuning possibilities, and I just feel more confident when I drive it. I could still win races with the T3 if the track conditions are right.

RCCA: What's up with the solid red paint job? I thought that red cars and trucks are considered unlucky—what happened to your usual colors?

BE: I would have liked to run my usual colors, but I couldn't get the body painted in time. I arrived at the track a few days before the event with a brand-new unassembled T4 in the box. I built the truck and painted the body while at the track. I never knew that red paint was unlucky, so the next time I have to paint a body in a pinch, I'll use yellow or white.



1st Annual
TRAXXAS
RADIO CONTROL
car action

MONSTER TRUCK RACE

by Kevin Hetmanski

With the growing popularity of monster trucks, we at Radio Control Car Action decided to stage our own battle of the big boys. We teamed up with RC Madness Hobby Shop and Raceway in Enfield, CT, to hold the first annual Radio Control Car Action Monster Truck Madness Race.

The weekend was all about having fun; many East Coast residents traveled to Connecticut to get in on the big-wheel action. Traxxas and New Era Models set up displays and also supported the race. I also planned to race and headed to the track with our big yellow Hummer stuffed full of prizes from all our sponsors. I took a few photos, so you can be in on the action.





Bring on the
big boys



1ST ANNUAL MONSTER TRUCK MADNESS RACE



Racers competed in five classes: Big-Block, Small-Block, E-Maxx, Clod Buster/TXT-1 and $\frac{1}{8}$ -scale Buggy. Rules were held to a minimum for maximum racing fun. If your truck had a .15 big-block engine or bigger, you went into the big-block class. Running a small-block engine? The small-block class was the one for you. It was a "run what you brung" event, and everyone seemed to enjoy the easygoing rules. The coolest class to watch was the Clod Buster/TXT-1. These guys were really beating and banging, and the crowd loved it!

the classes

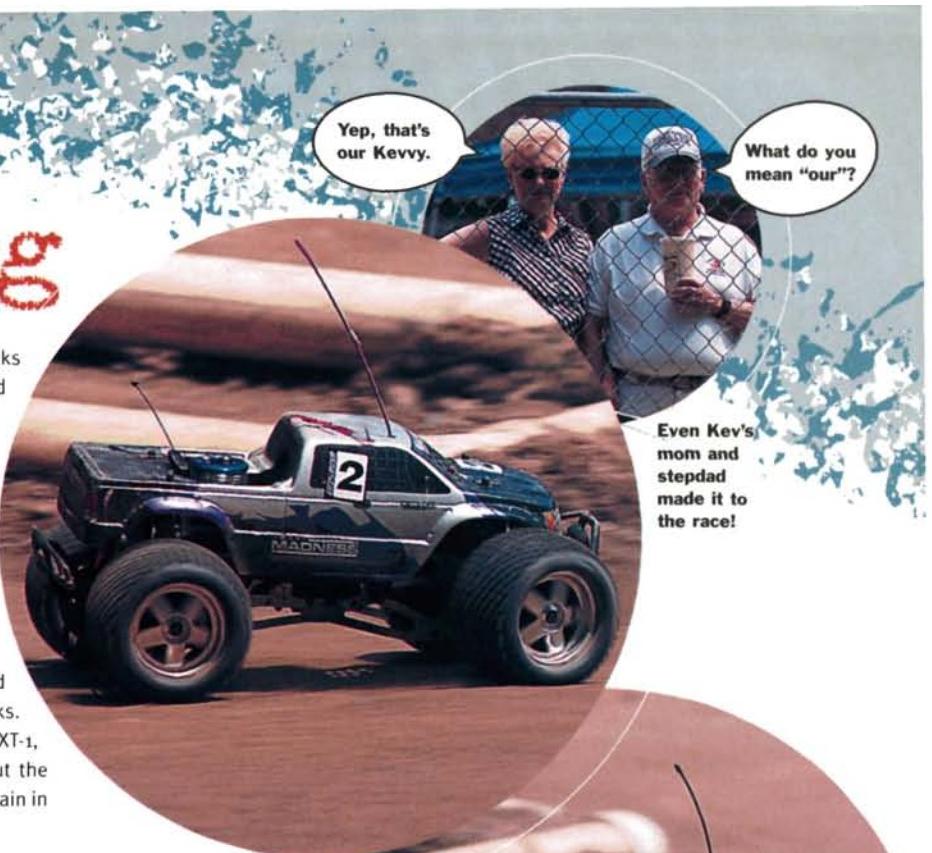


qualifying

Friday was open practice for folks to get their trucks dialed in for the race. Three rounds of qualifying started at 8:30 a.m. on Saturday. Racing ended by 4 p.m. and allowed people plenty of daylight to hang out at the track and work on their setups for Sunday.

Sunday began with another round of qualifying. A few showers in the morning didn't slow things down; racing started promptly at 8:30. Five-minute qualifiers were the norm, but the Clod Buster/TXT-1 class ran 3-minute qualifiers to ensure that everyone's batteries would last the entire race.

Greg Vogel took the TQ position in the Small- and Big-Block classes with his Unlimited Engineering trucks. Dave Gentry took over the E-Maxx class. In Clodbuster/TXT-1, Artie Fie and his Thunder Tech Ripper Clod edged out the competition for TQ. Jim Atkins started the $\frac{1}{8}$ -scale A-main in the number-one spot with his Kyosho MP7.5.



The trucks line up for the concours competition. Steve Slayden from Traxxas went home the winner. His paint job featured multiple colors including chrome, and it was very clean.



the mains

In the electric classes, the Mains ran as long as the qualifying rounds. The nitro classes lasted 30 minutes, and the first- and second-place winners from each Main were bumped up into the next higher Main.

SMALL-BLOCK. Greg Vogel dominated in the qualifiers, but the Main told a different story. A bad cell in Greg's receiver pack ended his run early. Steve Slayden from Traxxas took over the lead and never looked back. He finished a couple of laps ahead of the field.

BIG-BLOCK. Again, Greg Vogel started in the number-one position. His luck held this time, and the race for the big trophy was over from the beginning: Greg checked out at the start and remained on autopilot. All eyes then focused on Rob Allgeyer and Joe Mason as they competed for second place. They battled back and forth: Joe crashed, allowing Rob to catch up; then Rob crashed and fell back. It was exciting to the end. With two laps to go, Rob passed Joe, but not for long. Joe retook second place on the last lap. It ended with Greg as the winner, then Joe, and Rob was third.

E-MAXX. Dave Gentry managed to get off the starting line for the early lead with his brushless-motor-powered Unlimited Engineering Lighting E-Maxx. That lead didn't last long as the field started to show some muscle.

Mike Cronin and Mike Gentry knocked Dave back to third with their own brushless-powered trucks. When the dust had settled, Mike Cronin was the big winner.

CLOD BUSTER/TXT-1. At the start, Rob Allgeyer and Kevin Hetmanski (yours truly) jumped into the number-one and—two positions. Some crashes in the back of the field allowed us to pull away and stretch our leads. Rob held me off for the win; I was second, and Peter Spragg worked his way through the carnage to a third-place finish.

1/8-SCALE BUGGY. The number-one qualifier, Jim Atkins, jumped ahead early, followed closely by the rest of the field. Then Jim had car trouble, and Frank Jaquith got around him and took the lead. But Carl Smart worked hard to track down Frank, and during the last two laps, the excitement really picked up when Carl caught up to Frank. They swapped positions a few times, and Frank won by a mere half tire length.

Rob Allgeyer



the facility

Many of you may recognize the name RC Madness; it's where we test a lot of off-and on-road vehicles. It was the perfect venue for the first annual *Radio Control Car Action* Monster Truck Madness Race. RC Madness has a fully stocked hobby shop, an indoor carpet track, a huge paved on-road track and, of course, a sweet off-road track. Track owner Chris Marcy set up a tight, challenging course that was enjoyed by all the racers; it had killer jumps and plenty of all-around traction. The huge triple in the track's center was the real attention-getter. The trucks got sick air all weekend.



prizes for everyone!

The race was sponsored by *Radio Control Car Action*, *Radio Control Nitro*, CEN, DuraTrax, Futaba, New Era, Pro-Line, Tamiya, Team Associated, Traxxas, TRC and Trinity. With so many prizes, everyone—even the onlookers—took home something!

SICK 6X6



This truck caught my eye as I walked through the pits: it's a 6WD E-Maxx. John Gallinari from Galli-Mods sells conversion kits to convert a stock T- or E-Maxx into a sick six-wheeler. He raced the six-wheel T-Maxx, and it was a sight to behold. If you're interested in the conversion, visit the website at gallimods.com.



Traxxas was a big supporter and sent big gun Steve Slayden to race for the weekend. He won the Small-Block class with a stock T-Maxx!



We gave out all kinds of prizes over the weekend. Mike Coleman (left) went home with a DuraTrax Nitro Quake, and Bob Boisselle (right) picked up a new Tamiya TXT-1.

the winners...



BATTERY BUGGY



This guy gets the weekend's award for creativity. Charles Monn arrived with a unique $\frac{1}{8}$ -scale OFNA buggy that he converted to electric power. Charles basically bolted a Traxxas E-Maxx motor plate to the center diff mount so two Traxxas 5-50 motors could spin the drive train. It's powered by two 7-cell batteries, and a Novak EVX ESC controls the motors.

in the end...

Everyone had a good time! The spectators enjoyed the fun and enthusiastically cheered on the racers. Thanks to all the sponsors for the great giveaways. Next year, the

race will again take place at RC Madness; so make your plans, pack your bag, and come on out and be part of the fun. See ya in 2004!

SMALL-BLOCK

FIN.	QUAL.	DRIVER	CHASSIS	ENGINE	PIPE	FUEL	RADIO	TIRES
1	3	Steve Slayden	Traxxas T-Maxx	TRX 2.5	TRX composite	Traxxas Top 20%	Hitec Aggressor	Traxxas Sporttraxx
2	10	Carissa Figelski	Traxxas Sport Maxx	TRX 2.5	TRX composite	O'Donnell 20%	Airtronics M8	Traxxas Sporttraxx
3	4	Dennis Muntean	Traxxas T-Maxx	TRX 2.5	TRX composite	Traxxas Top 20%	Airtronics M8	Pro-Line Bow Tie

BIG-BLOCK

1	1	Greg Vogel	Unlimited Razorback	C5	RB	Blue Thunder 30%	Airtronics M8	Traxxas Sporttraxx
2	9	Joe Mason	HPI Savage	HPI Nitro Star .21	HPI	O'Donnell 20%	Airtronics M8	Pro-Line Bow Tie
3	4	Robert Allgeyer	Unlimited Razorback	RB X15	RB	Blue Thunder 30%	Airtronics M8	OFNA MT Oval

E-MAXX

1	2	Mike Cronin	Unlimited Lightning	Hacker	Hacker	Trinity 3000	KO EX1	TRC Micro
2	3	Mike Gentry	Unlimited Lightning	Hacker	Hacker	Trinity 3300	Airtronics M8	Panther Meat Grinder
3	1	Dave Gentry	Unlimited Lightning	Hacker	Hacker	Trinity 3300	Airtronics MX-3	Pro-Line Bow Tie

CLOUD BUSTER/TXT-1

1	2	Rob Allgeyer	Thunder Tech Tremor	Reedy Ti Mod	LRP Quantum	Trinity 3300	Futaba 3PS	Pro-Line Giant Trac
2	3	Kevin Hetmanski	Thunder Tech Ripper	Trinity P94	LRP Quantum	Trinity 3300	Airtronics M8	Kyosho Nitro USA-1
3	5	Peter Spragg	Thunder Tech Ripper	Trinity	LRP F1	Trinity 3300	Futaba 2PKA	Tamiya

1/8-SCALE BUGGY

1	5	Frank Jaquith	Mugen MX-5	O.S. VZB	RB	O'Donnell 30%	Airtronics M8	Pro-Line Crime Fighters
2	2	Carl Smart	Mugen MX-5	RB WS7	REX	O'Donnell 20%	Futaba PDF	Pro-Line Crime Fighters
3	5	Ray Milvae	Kyosho MP7.5	RB S-7	RB	O'Donnell 30%	Futaba 3PJ	Pro-Line Crime Fighters



Chris Marcy (left) of RC Madness put on a good show. Thanks, man!



The guys from New Era made the trip from New Hampshire to give out various prizes and show off some of their cool products.



Robin Oury from Unlimited Engineering worked on one of the five prototype trucks he had brought. He must be onto something; he took home a ton of trophies. I tried to get a close-up of one of the new rigs, but somehow, I blacked out and ended up in the Hummer—strange.

SOURCES

DURATRAX distributed by Great Planes Model Distributors (217) 398-6300; (800) 682-8948; duratrax.com.

CEN/GENKA TRADING CORP. (714) 792-1923; cenracing.com.

FUTABA distributed by Great Planes Model Distributors, (217) 398-6300; (800) 682-8948; futaba.com.

NEW ERA MODELS (603) 888-4453; neweramodels.com.

PRO-LINE (909) 849-9781; pro-lineracing.com.

RACERS EDGE (801) 978-9501.

TAMIYA AMERICA INC. (800) 826-4922; tamiyausa.com.

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howto rebuild your carburetor

Only 30 minutes to a better running engine by Steve Pond

When a nitro engine isn't running well, we're programmed to check the condition of the piston and sleeve, to look for an air leak, check the glow plug, etc. Rarely, however, is the carburetor's condition on the troubleshooting "radar" as a potential source of problems. The carb is one of those constants that everyone assumes will always function properly and is least suspect when engine trouble arises. The truth is, modern carburetors are very reliable and are not often the cause of tuning problems, but when the carb is the culprit, it's often the last place anyone looks.

The carburetor has one of the most important jobs in your engine: metering air and atomized fuel. Time and use take their toll on any carb; even the best maintenance regimen can't prevent good ol' wear and tear. The average carb has upward of a dozen seals and gaskets, all of which can be damaged during assembly at the factory or will wear with time. Any unsealed areas can contribute to hard-to-trace air or fuel leaks that will

cause your engine to run poorly. If you haven't ever taken apart a carburetor, it may seem intimidating, but rebuilding a carb is actually pretty simple. Just follow the steps below, and you'll be well on your way to solving that tuning hitch that your engine might have had since day one.



you'll need

- Clean towels
- Various tools to disassemble the carb
- Nitro cleaner or denatured alcohol
- Blue Loctite
- WD-40
- Team Associated Green Slime assembly lube
- Carburetor gasket/O-ring set
- Compressed or canned air
- Old toothbrush or clean flux brush
- Latex gloves and eye protection

1 REMOVE THE CARB FROM THE ENGINE. Loosen the screw (or screws) that holds the carb to the engine block and gently twist the carb as you pull it out of the engine. If your engine has a two-piece clinch assembly, twist the carb gently in both directions before removing it from the engine. This ensures that both halves of the clinch bolt release their grip on the carburetor. Keep an eye out for O-rings when you remove the carb from the engine, and make a note of their positions.



2 GIVE THE WHOLE CARB A GOOD SPRAYING DOWN with nitro cleaner to remove all traces of dirt and grime that may have accumulated; use an old toothbrush to remove the stubborn stuff. Even if there isn't any visible buildup, it's best to clean the carb well before proceeding. When it's clean, blow off any excess solvent with canned or compressed air, and then give the entire carb a good spraying with WD-40. This coats all the seals with a light lubricant that makes disassembly easier.



3 MAKE A NOTE OF THE MIXTURE-NEEDLE POSITIONS.

Gently turn the low- and high-speed mixture screws clockwise until you feel a little resistance; make a note of how many turns it took to close the needles. This will give you the approximate mixture settings; you will need them when the rebuild is complete. For 3-needle carbs, check the "distance-from-flush" to establish the approximate position of the midrange adjustment. Also, be sure to check the size of the carb's opening when it's in the idle position; this determines the appropriate idle-speed screw setting.



4 REMOVE THE IDLE-SPEED SCREW. A spring might be installed over the idle-speed screw, so be careful not to lose it when the screw is taken out. There may also be an O-ring on the screw or in the carb housing in this area. Be sure to make a note of its position and check for a replacement in your carb seal kit.

5 REMOVE THE SLIDE OR ROTARY VALVE FROM THE CARB BODY.

The idle screw typically secures the slide or rotary valve, so the valve should be easy to remove once you've taken off the idle screw. You may have to gently pull the rubber boot off the carburetor body to completely remove the valve assembly. Some rotary carbs, like the O.S. 10ER, have a spring installed between the end of the rotary valve and the carb body, so be sure to work slowly over a clean work area and make a note of where odd or loose parts are installed.



6 UNSCREW THE MAIN NEEDLE ASSEMBLY FROM THE CARBURETOR. The fuel inlet (banjo fitting) and any seals will come off with the main needle assembly when it's removed.



7 REMOVE THE MIDRANGE "NEEDLE"

from the carburetor body (if it has one). Again, make a note of the needle's starting position so you can later reinstall it in the same position.



8 THE CARB HOUSING SHOULD NOW BE STRIPPED of all removable parts, and it's ready to be cleaned and prepped for reassembly. Clean the housing thoroughly, and blow away any residual cleaner with compressed or canned air. Pay particular attention to small passages where debris could become stuck and potentially disrupt the fuel flow. Blow out these passages thoroughly, spray the housing with WD-40, and blow off the excess again.

HOW TO REBUILD YOUR CARBURETOR

9 IF YOUR CARB HAS A MIDRANGE "NEEDLE," IT USUALLY HAS A COUPLE OF O-RINGS THAT NEED TO BE REPLACED AS PART OF THE REBUILD. GENTLY REMOVE THEM AND THOROUGHLY CLEAN THE ASSEMBLY.

Install fresh O-rings and coat them with Green Slime assembly lube. Before you reinstall the "needle" in the carb housing, inspect the carb housing for burrs or other sharp edges that could cut the new O-rings. If needed, de-burr the housing to ensure the safe installation of this and all other components (see the "De-burring" sidebar for more information).



10 REMOVE THE LOW-SPEED NEEDLE from the slide or rotary assembly, clean all the parts, and replace any O-rings on the mixture needle. Lube the O-rings and thread the needle back into place. You don't need to worry about an exact setting right now; that will come later. Just thread the needle in until the O-rings are safely seated.



11 INSTALL THE SLIDE OR ROTARY VALVE in the carburetor housing with a new accordion seal. Next, install the idle-speed screw; make sure that its tip properly lines up with the indexing slot in the slide or rotary valve. The idle screw not only sets the minimum opening of the carburetor, it often doubles as a retainer for the air valve.

12 REMOVE THE MAIN FUEL-MIXTURE NEEDLE from its housing, clean it and replace its O-rings. Thoroughly clean the housing; be sure to spray cleaner and compressed air through the bottom of it. This is usually where fine debris that makes it into the fuel line gets stuck. After lubricating the new O-rings, reinstall the main needle to roughly the same depth it was when it was removed.



13 CLEAN AND INSPECT THE FUEL INLET (banjo fitting) to make sure there's a clear, straight passage for the fuel to flow into the main needle assembly. This is especially important on engines that use a plastic fuel inlet because the fuel passage can be easily crushed (and closed off) if the main needle assembly is ever overtightened. A quick fix is to run a sharp drill bit through the fitting to reopen it to the original size, but it's best to install a new fitting. Install any O-rings or gaskets in their proper places, then slide the fuel inlet over the main needle housing.



Cleaning

Proper cleaning and prep of carb components during a rebuild is important for a positive result. The old saying, "Cleanliness is next to godliness," was never more true than during a carb rebuild; it can't be too clean. Clean your carb and its components with specialized nitro cleaners or denatured alcohol; don't be afraid to use an old

toothbrush to aid in the process.

Be cautioned, however, not to use brake cleaner or any other automotive solvent just because it's sitting around the shop. Some automotive solvents contain low concentrations of muriatic acid; it reacts with aluminum and can permanently bond two or more carb parts that were never meant to be stuck together.

When all the parts are clean, blow the excess

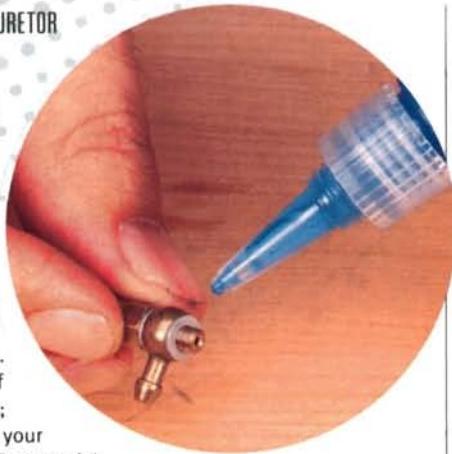
solvent from the carb components with compressed or canned air. Give the parts a good dose of WD-40 to eliminate moisture and blow away the excess again. Now you're ready to reassemble the carb.

When using solvents and compressed air, use your noodle and remember to wear protective latex gloves and eye protection.

HOW TO REBUILD YOUR CARBURETOR

14 INSTALL THE MAIN NEEDLE HOUSING ON THE CARBURETOR HOUSING.

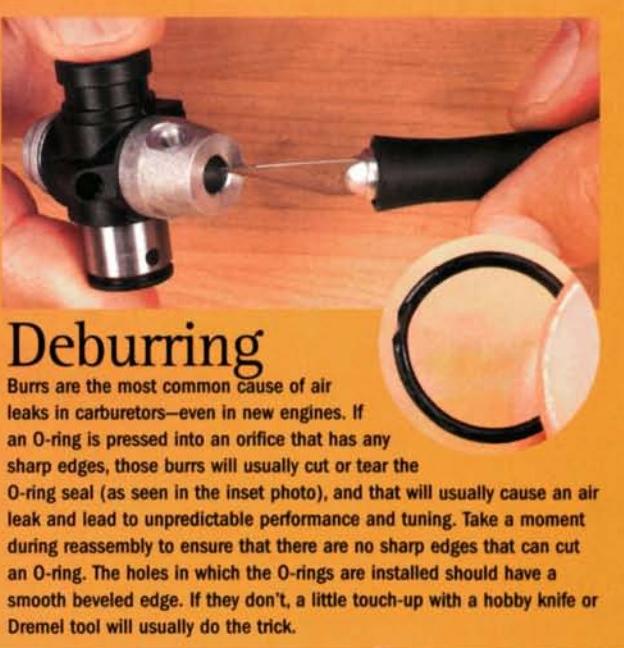
I like to use a very small amount of blue Loctite on the threads here; it not only keeps the main needle in place, but it also acts as a sealant around the threads. Use very little thread-lock if you choose to do the same; wipe away any excess with your finger prior to installation. Pay special attention to the direction the fuel fitting faces because it's best to tighten this assembly only once for the gaskets to seal properly. Repeated loosening and retightening of the main needle housing to readjust the angle of the fuel fitting is likely to damage the seal, and that can cause an air leak.



15 THE CARB IS NOW COMPLETELY REASSEMBLED, and you only need to set the various screws to their approximate original settings. Begin by setting the idle speed screw for the proper gap in the slide or rotary valve. While holding the carburetor firmly in the idle position, thread the low-speed needle in until you feel a slight resistance, then back it out to its setting. Set the main needle to its previous setting.

Slime time

Green Slime is a well-known lube for assembling shock absorbers, but it isn't nearly as well known as an assembly lube for the O-rings during a carburetor assembly. Jim from Paris Racing said the late Ron Paris used only Green Slime because it lubed the seals well during installation and didn't leave any harmful residue that could later cause engine problems. Green Slime is available from Team Associated under the Factory Team label (item no. 1105).



16 INSTALL THE CARB ON THE ENGINE.

It's best not to completely tighten the clinch assembly because the angle of the carb may need to be tweaked when the engine is reinstalled on the chassis. When you tighten the carb for the last time, press it down firmly on the engine while tightening the screw to ensure that it's well seated and is properly sealed against any O-rings at the base of the carb.



17 SPEND SOME TIME FINE-TUNING the fuel-mixture needles. The ballpark settings used during the rebuild should help your engine fire right up again, but subtle tweaking is often necessary for maximum performance.

Now the rebuild of your carb is complete. Although there are a lot of steps, it's a simple (and usually inexpensive) process that is often the cure for difficult-to-tune but otherwise good engines. Opening up a carb for the first time might make you a little nervous, but when you finally have it broken down, you'll see that it's pretty simple and straightforward. Even a slow rebuild will take only about 30 minutes, so take the time to do it right, and you'll be rewarded with an engine that runs more consistently.



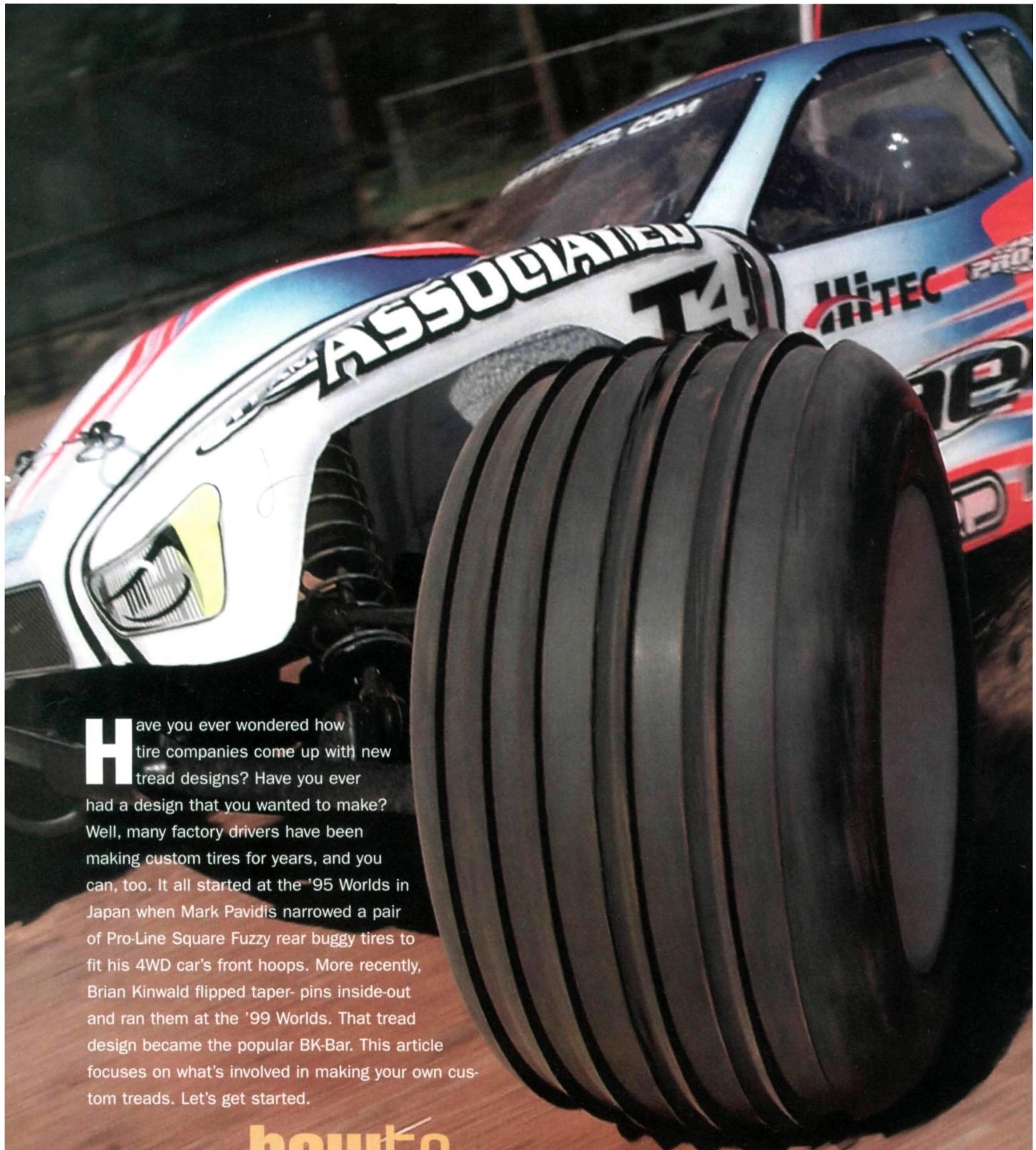
SOURCES

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O.S. ENGINES distributed by Great Planes Model Distributors (217) 398-6300; (800) 682-8948; osengines.com.

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Have you ever wondered how tire companies come up with new tread designs? Have you ever had a design that you wanted to make? Well, many factory drivers have been making custom tires for years, and you can, too. It all started at the '95 Worlds in Japan when Mark Pavidis narrowed a pair of Pro-Line Square Fuzzy rear buggy tires to fit his 4WD car's front hoops. More recently, Brian Kinwald flipped taper-pins inside-out and ran them at the '99 Worlds. That tread design became the popular BK-Bar. This article focuses on what's involved in making your own custom treads. Let's get started.

howto build custom

you'll need

- Sharp scissors
- Tire glue (medium-thick and thin)
- Rags

create your own treads



TOP TIP

Sharp, clean scissors are a must! Use motor spray to clean any sticker residue or other gunk off your scissors blades. If that doesn't revive their cutting power, invest in a new pair.

1 DECIDE WHICH TYPE OF TIRE YOU WOULD LIKE TO MAKE.
See the "Popular custom treads" sidebar for some tread designs, or come up with your own. I'll show you how to make a Team Losi "inside-out" rear buggy tire by cutting out the tread of a taper-pin tire, turning it inside out, and gluing it to the sidewalls.



2 CUT THE TIRES. DuraTrax makes scissors that are designed to cut tires, and straight Lexan scissors also work well. It is absolutely critical that you cut straight to ensure perfect glue joints later. If you cut jagged edges, you'll have a hard time gluing the parts together, and your tires might fall apart on the track.

by Nick Sava

off-road tires



3 TRIAL-FIT THE TREADS. Before you start to glue, trial-fit the tread pieces together to ensure they match. If you encounter lumps or bumps, go back and trim the section with Lexan scissors or an X-Acto knife.



4 GLUE THE TREADS. Start by applying tire glue—just enough to coat the surface—to one edge of half a tire. Quickly position the edge of the other half on the glue; be careful to line up the treads as you want them. Glue together a small section at a time to ensure a proper bond, and hold the tire halves together for 20 seconds to allow the glue to get tacky before you glue the next section. If you do it right, you should see very little glue squeezed out at the seam. Continue these steps until the tire halves have been glued together completely.



5 ALLOW THE GLUE TO DRY AND THEN TEST THE BOND. Give your new tire a few minutes to dry, then carefully pull on the halves to test the bond. Add glue to any areas that you can pull apart, and allow the glue to dry completely.

Don't use a glue accelerator, or "kicker," to shorten the drying time. It will make the joints very brittle, and the tire halves will come apart when you use them.

THE RIGHT GLUE FOR THE JOB

You'll need top-quality RC tire glue to ensure a proper bond for the treads. Team Losi's Tread Lock is easy to work with.

The included applicator tube applies just the right amount of glue for a good bond. I used the standard, medium-thick stuff (blue label) to glue the treads together and used the thinner stuff (red label) to glue the tires to the wheels.



CHOOSE THE RIGHT FORMS

After you've spent time on making custom tires, you don't want to put just any foams in them. All racing off-road tires work better with support. Trinity and Pro-Line make excellent foam inserts for off-road tires. Trinity's 2- and 3-stage foam inserts (shown here) work very well. Just be sure to glue the foam rings together before you insert them into the tires. Trinity's "Bomb Glue" is perfect for the job. You can even use it to make custom inserts; for example, you could assemble front tire inserts with firm outer halves and soft inner halves.

POPULAR CUSTOM TREADS

Here are some of the most useful tread combinations that I've tested, but the sky is the limit! Not only can you glue together different tread patterns, but you can also experiment by combining different tire compounds. I've seen racers make tires with a harder compound on the outside half and a softer compound on the inside half.

Here are five popular combos I've seen at the track (from left to right):



TEAM LOSI TAPER-PIN FRONT BUGGY TIRES.

I made these by removing the center bars from the taper-pin rears. They're ideal for high-bite, blue-groove tracks.

PANTHER FRONT TRUCK TIRES.

I made these with half a Stinger tire and half a micro-rib tire. They provide a good combination of steering and stability on hard-packed surfaces.

PRO-LINE BLADE FULL-RIB FRONT TRUCK TIRES.

These tires are made by combining the ribbed halves of Pro-Line's popular Blade front truck tires. You need two pairs of those

tires to make one pair of the custom treads. The micro-pin half is cut away from the ribbed half, and two ribbed halves are glued together to make one tire. This tread gives you excellent low-speed steering with good control.

TEAM LOSI INSIDE-OUT TAPER-PIN FRONT BUGGY TIRES.

Originally created for M'n'M Raceway's unique high-bite surface, the tread portion of the taper-pin tire is cut out, turned over and then glued to the original sidewalls. This tire works remarkably well when the track has lots of traction. Losi's BK-Bar is

modeled after this tire. The best thing about making this tire is that you can use an old worn-out pair of taper-pins that are already glued to the rims.

PRO-LINE 4WD FRONT SQUARE FUZZIES.

These were made using a pair of Square Fuzzy rear buggy tires with the center sections removed to fit the 4WD front rims. Mark Pavidis used exactly the same tire combination to win the 4WD Worlds in '95. The tires work great on hard-packed and slippery surfaces.

SOURCES

DURATRAX distributed by Great Planes Model Distributors (217) 398-6300; (800) 682-8948 duratrax.com.

PANTHER PRODUCTS INC.
(866) 700-8473; panthertire.com.

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Project Thunder Tiger EK-4



Even in bone-stock form, the Thunder Tiger EK4 is RC's most outrageous monster truck. Its colossal .70 engine has more than triple the displacement of a traditional .21 mill, and that has to put the EK4 at the top of every horsepower junkie's top 10 list. But you know me! Though the EK4 doesn't lack power, there are countless ways to harness all those snorting ponies more effectively—as well as increase its durability and dress it up some, too. With a bunch of bolt-ons and a few modifications of my own, I built my personal vision of the ultimate EK-4.

4x4

Parts list

TTR

- EK4 monster truck—TTR 6216 A-1; \$450

chassis

MSJ

- EK4 brace kit—\$74.50

TRIPLE H RACING

- 5mm chassis—EK4-1011; \$89
- Aluminum radio-box top plate—EK4-1016; \$29.95
- Servo top plate—EK4-1001; \$38.99

drive brain

MSJ

- Differential case—\$110

suspension and steering

MSJ

- EK4 shock towers (F/R)—\$42.95 each
- EK4 front quad-shock mount—\$21.95

FIORONI

- TT EB4 ergal front knuckles—OT-TT10; \$72.99/pair
- TT EB4 ergal rear hubs—OT-TT07; \$84.99/pair

TRIPLE-H RACING

- Aluminum steering slider—EK4-1006; \$15.99

UNLIMITED ENGINEERING

- SuperMaxx RacerX shock kit—UE-10120; \$169.99

Engine accessories

MSJ

- Starter kit (blue)—\$42.95
- The Fridge heat-sink head—\$69.99

GOLDEN HORIZONS

- 1/8-scale tuned pipe—08105; \$34.99

TRIPLE H RACING

- Large-diameter flywheel—EK4-1023; \$24.99
- Heat sink motor mounts—EK4-1009; \$27.99

HPI

- Savage fuel tank—87031; \$12.99

Electronics

FUTABA

- 3PK radio—FUTJ32; \$329.99
- 9450 throttle/steering servo—S9450; \$149.99

TEAM ORION

- 1100mAh receiver battery—12211; \$26.99

body wheels & tires

MSJ

- 5-spoke aluminum wheels—\$65/pair

PRO-LINE

- Chevy Silverado Crew cab—3100-00; \$26
- Maxx Mulcher tires—1085-00; \$29/pair
- Total cost: \$2,439.11

You don't need four shocks on the front, but four look better than three. Mine are from Unlimited Engineering, and I mounted them using parts from MSJ.



KIT FEATURES

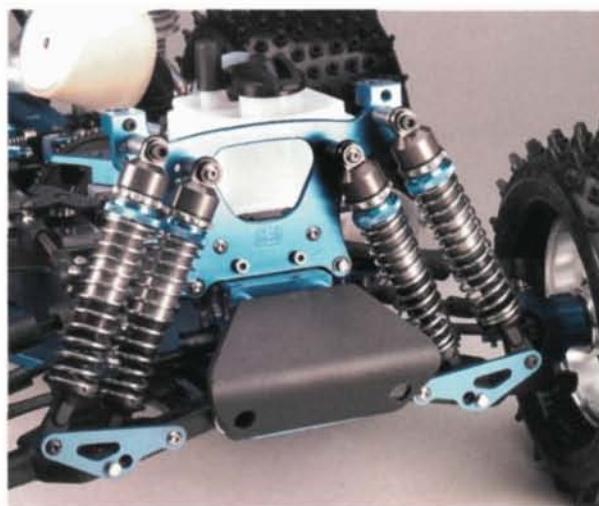
CHASSIS. I replaced the stock chassis with a trick one from Triple-H Racing. This thing is beefy! It's machined out of 5mm-thick aluminum plate, and all the edges are smooth, unlike the EK4's stock stamping. Instead of bolt-on plastic dirt shields, the Triple-H chassis is extra wide, and its sides are bent up to act as dirt shields. Material has been removed from the chassis' bottom to reduce weight. Triple-H even machined in the *RC Car Action* logo for us. Cool!

This chassis doesn't need braces to stiffen it, but what the heck! I added them anyway. The front and rear braces are from MSJ. The aluminum-billet rear brace spans from the center diff to the rear diff housing. I found that the brace on my truck prevented the arm on the carburetor from opening it. I marked the arm's position on the brace and machined that section on my milling machine to ensure clearance for the arm. The front brace is machined out of aluminum, and the brace and center diff plate are machined as one piece to increase chassis stiffness.



Could this chassis be any cooler? Triple H Racing makes it out of super-thick aluminum plate. The bottom is machined to reduce weight, and the folks at Triple H even machined our logo into the bottom.

SUSPENSION. The stock suspension is set up for seven shocks: four in the rear, two in the front and a third hidden behind the front bumper. I replaced this unusual setup with MSJ's front and rear quad shock towers for a more traditional 8-shock setup.



To make certain I wouldn't blow out the shocks, I added a Super Shock kit from Unlimited Engineering. The aluminum dampers feature threaded bodies, titanium-nitride shock shafts and rubber boots. I filled the shocks with 30WT shock oil from GS Racing.

FUEL TANK. The EK4's big .70 engine sucks down the gas, and I felt that the stock 125cc fuel tank wasn't up to the job, so I replaced it with a 160cc HPI Savage tank. I made carbon-fiber plate mounts that I bolted to the center diff plate and steering-bellcrank brace. The mount holds the tank backwards so that the fuel pickup is in the rear of the tank. If it wasn't installed in this way, acceleration would cause fuel to slosh away from the pick-up.



Left: take a look at that diff housing from MSJ! The entire thing is machined out of aluminum billet. It's sealed, so you can fill the case with silicone fluid to lubricate the gears.

Below: Triple H Racing offers this cool receiver box cover for the truck. It doesn't improve performance or add strength but who cares. It sure does look good!

ENGINE. The newer versions of the EK4 feature a large engine-cooling head. It's effective, but it doesn't look very good, and it's heavy. I couldn't have that! I replaced it with an MSJ Fridge cooling head that's machined out of aluminum billet. The replaceable ring on its top is available in blue, purple and red. If you flip the truck over and scratch it, just replace the ring and not the entire head. The engine sits high in the chassis frame, and the small stock flywheel doesn't come even close to reaching the opening in the chassis. That's why you have to use a starter wand to fire the beast up. The wand works fine, but I prefer to use a starter box, so I installed Triple H's machined, large-diameter vented flywheel. It's big enough for a starter-box wheel to contact it—no more starter wand! Now that I use a starter box, the backplate won't get much use, but the stock unit doesn't look very pretty. I threw MSJ's starter kit into the mix. The housing is machined out of billet aluminum, and the starter shaft is made out of hardened steel. Not only does it look good but it's also much stronger than the stock unit. Rounding out the engine mods are a set of finned, aluminum, Triple H engine mounts and a dual-tip aluminum tuned pipe from Golden Horizons.



Can't have a tricked-out truck without a set of trick wheels. MSJ hooked me up with these sweet 5-spoke beauties. I wrapped a set of Pro-Line Maxx Mulcher tires around them to give my truck some traction.

with 10,000WT silicone diff fluid to help control the power that is transferred through them.

DRIVE TRAIN. OK; first things first. Check out the front and rear diff housings from MSJ. Aren't they awesome? The stock plastic housings can flex when the power of that massive .70 kicks in. That flexing can widen the gap between the ring and pinion gears, and that can ruin them. The MSJ parts aren't just for looks: they fight the flex. Each is made of several machined-aluminum pieces, and the entire housing is sealed. Because of this, you can fill them with silicone shock oil to lubricate the gears. The engine's crazy power also gives the diffs a work-out. They come from the factory packed with grease, but I refilled them

BODY, TIRES AND WHEELS.

I'm not too fond of the stock truck body that covers the chassis. I replaced it with a Traxxas E-Maxx Pro-Line Chevy Silverado body, which I hand-painted to our own Josh Thiel so he'd be able to lay down some sick paint. The stock rims look good but not as good as MSJ's aluminum wheels. They are designed to accept T-Maxx-size tires, so I called Pro-Line and ordered a set of Maxx Mulcher tires to go with them. They look mean and provide my truck with tons of traction.

SOURCES

FIORONI OPTION PARTS distributed by General Silicones Co. USA (626) 338-3815; generalsilicones.com.

FUTABA; distributed exclusively by Great Planes Model Distributors Co. (217) 398-6300; (800) 682-8948; futaba-rc.com.

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HOBBY LOBBY INTL. (615) 373-1444; hobby-hobby.com.

MSJ PRECISION PRODUCTS (480) 632-5337; msjproducts.com.

PRO-LINE (909) 849-9781; pro-lineracing.com.

TEAM ORION INC. (794) 694-2815; teamorion.com.

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PERFORMANCE

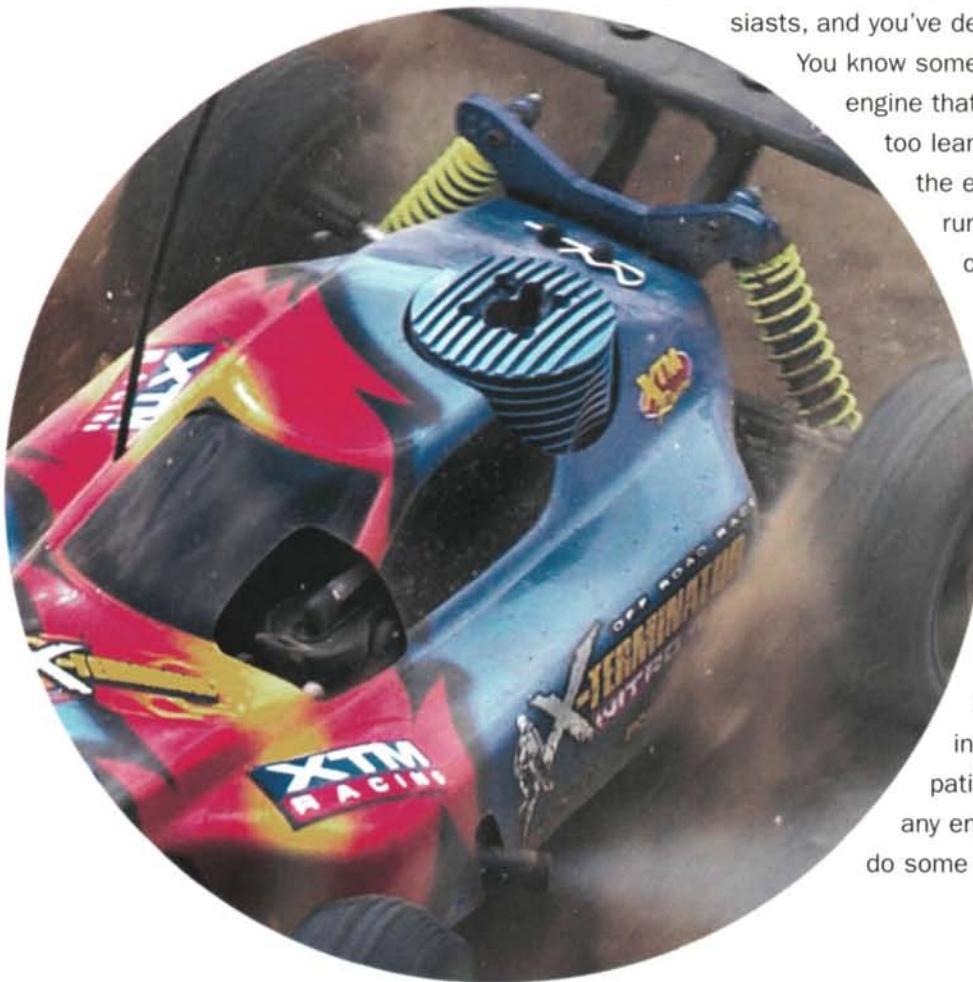
I love that new flywheel. This thing is so much easier to start when you have a starter box. Let me warn you, though: my starter box struggled a little when it turned the engine over. The engine has a lot of piston to move, and the compression is up there, so you'll need a starter box with

plenty of torque. I do still have the wand option if I need it. In stock form, the EK4 had tons of rip off the line, and it has even more now. The smaller tires lower the final drive ratio so the truck has ungodly low-end grunt. Top speed suffered a little because of this, but who cares! It's all about the wheelies. Steering is more responsive, thanks to the lighter Pro-Line tires; the servo doesn't have to work as hard to move them. The stiffer suspension made a big difference. I thought that the stock shock setup allowed the truck to bounce around a little too much, and that made it hard to control. Thanks to its upgraded suspension, my truck is much easier to control. It's more planted on the smaller bumps, and the chassis doesn't bottom out as much when it lands off a jump.

TALK TRUCK!

Send your "4x4" questions and comments to Kevin Hetmanski, kevinh@airage.com.

How to keep your engine running



So, you've worked your way up into the ranks of the nitro enthusiasts, and you've developed an ear for engine tuning.

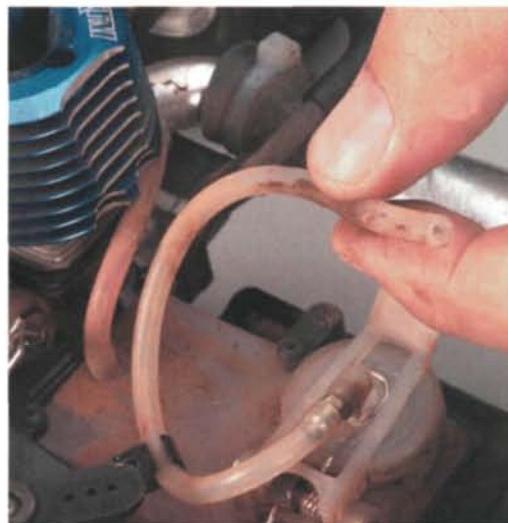
You know some of the trademark signs of an engine that's running too rich and one that's too lean. But there will be a time when the engine gets stubborn and won't run for long enough to give you a clue about how it needs to be adjusted. It's usually just before a race, so the problem is compounded by a seemingly impossible time limit. With or without time constraints, this problem is frustrating, but fortunately, it isn't too difficult to solve.

This is a common-sense, step-by-step guide to getting your engine started and keeping it running. Armed with the following information and a little patience, you should be able to get any engine fired up for long enough to do some proper tuning.

FUEL, WIND AND FIRE

Only three elements are needed to get an engine started: fuel, air and a glow plug for ignition. If you have these three in the proper doses, your engine will always start. If it doesn't, run through the following checklist before you try to start it again.

FUEL. Is the engine getting fuel? A few easy checks will help eliminate everything but the adjustment of the carburetor as the potential cause of the problem as it relates to fuel delivery. Pull the pressure line out of the tuned pipe or muffler and gently blow into it. Don't be a melon head and suck the tubing instead of blowing into it. Blowing into the pressure line from the exhaust should cause fuel to flow through the carb and into the engine. With the air filter removed, watch the carb opening to see whether the engine is getting fuel. Open the throttle fully to make it easier to see whether the fuel is flowing. If fuel flows into the engine, you should be able to start it, but not before we do a few more simple checks.



Make sure that the fuel goes through the carb and into the engine. To check this, blow lightly into the pressure line that comes from the muffler or tuned pipe.

piston power

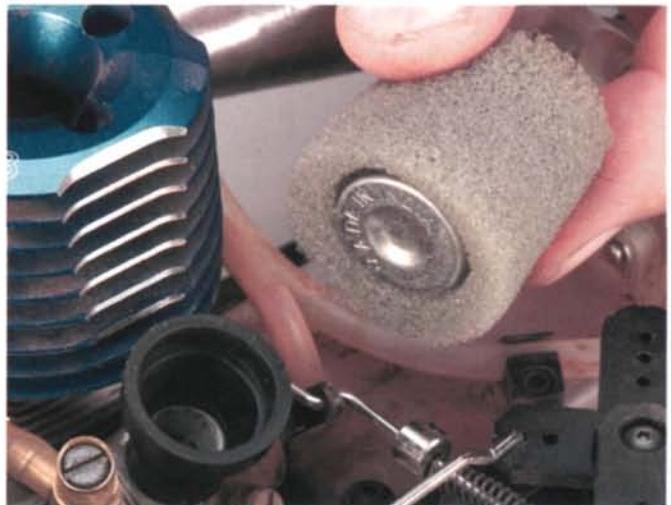
WIND. The air filter should be clean enough to allow an adequate airflow, and it should be installed properly. The most common mistakes related to cutting off airflow happen right after you've done some air-filter maintenance. Installing a paper filter upside-down (so the end of the filter without the hole is stuffed into the rubber boot) and excessively oiling the filter are just a couple of examples of how you can cut off the airflow to the engine. A bad idle-speed-screw setting can also cause a lot of headaches. Adjust it so that the carb is open about 1mm.



A clean air filter and a 1mm carb opening (the minimum) will ensure that your engine has enough air to start easily. Don't use your radio trim settings to adjust the idle speed; the engine will stall whenever you hit the brakes.



Proper air filter installation will make an engine easier to start. The filter shown on the left can only be installed in one way.



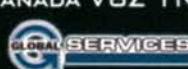
The photo below shows that one end of the filter is completely sealed. Install this end of the filter facing downwards, and you'll have a tough time getting the engine started.

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Check your glow plug. A well-used plug may still light up when you connect it to the igniter, but it may nevertheless be fouled by long use, and that will make your engine difficult to start.

FIRE. A nitro engine doesn't have a complicated spark-ignition system; it only has a glow plug. Simply pull the glow plug out of the engine and power it up with a glow igniter; it should glow a bright white/orange. If it doesn't glow at all, the cause of your problem is revealed; if it lights up poorly or the element is white or black, the glow plug may have seen better days, and it may be time to replace it. Spend a few bucks on a new plug; it's a cheap price to pay to save yourself the aggravation of trying to start an engine whose plug is in poor condition.



Both of these plugs will light up when connected to a glow igniter, but they're both damaged. The plug on the left has a coil that's compressed into the housing. The plug on the right is fouled in addition to having a broken coil that will light intermittently.

START YOUR ENGINE

Now that you've successfully completed a check of the three primary elements of fuel, air and ignition, the only thing that could possibly prevent your engine from firing up is a bad fuel-mixture setting. Two quick checks will tell you whether the mixture is too lean or too rich.

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LEAN MIXTURE. Always first assume that the fuel mixture is too lean. Before I start my engine, I pour a little fuel into the carburetor (about as much fuel as would fill the small cap of a fuel-filler bottle). Avoid pouring too much fuel into the carb, or you'll cause hydraulic locking—a condition

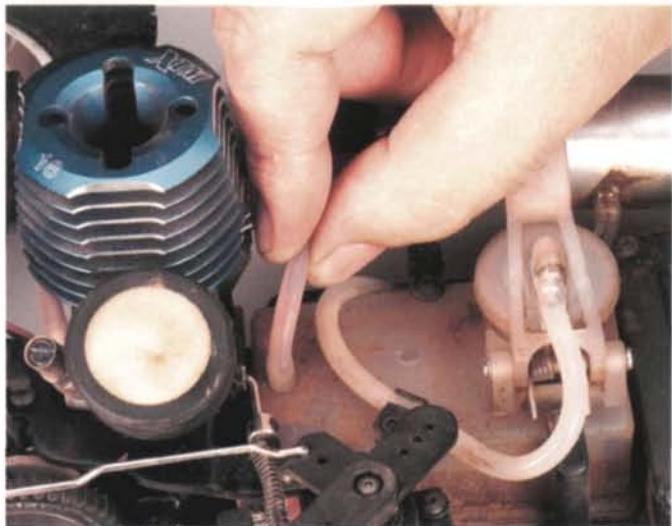
in which the engine can't turn over because the cylinder is full of fuel. Crank the engine over to see whether it will start. If it runs better and longer than it did previously, you should open the fuel-mixture needles to allow more fuel to flow into the engine. I suggest that you open the needles as much as $\frac{1}{4}$ to $\frac{1}{2}$ turn counterclockwise. If the current setting is so lean that the engine won't start or runs for only a few seconds, it needs a lot more fuel.



Above: pour a little fuel into the carburetor. If your engine starts more easily, it shows that the mixture setting is too lean and the engine is starved of fuel.

Right: to start a flooded engine that's not already hydra-locked from excessive fuel, open the carburetor to full throttle to let more air into the engine.

RICH MIXTURE. When you start the engine, use a clothespin to pinch the fuel line (or have a friend pinch it for you) to stop the flow of fuel. This will force the engine to run on the fuel that's in the crankcase. You might want to have someone hold the throttle open to let more fresh air into the engine; this will help a flooded engine to start more easily.



Pinch the fuel line to check your fuel mixture. The length of time the engine continues to run without any fuel will show the direction in which you need to adjust the mixture.



WHEN THE ENGINE IS RUNNING. You aren't out of the woods yet because you have to keep it running. Pinching the fuel line will help you to determine which way to go with the low-speed mixture. Listen to the engine's reaction when you pinch the line; it should run for 3 to 5 seconds before it stalls. It's normal for an engine to race a little before it dies, but if it runs for longer than 5 seconds, the low-speed mixture is a little rich.

Adjust the needle to lean the mixture until the engine runs for 5 seconds, or slightly less when it's warm.

If the engine runs for less than 3 seconds after you've pinched the fuel line, you have a lean low-speed mixture. Open the low-speed needle until the engine can run for at least 3 seconds or slightly longer. This "pinch" method is most effective when the engine is up to its running temperature, so if you try this when the engine is cold, you may have to richen the mixture once the engine has warmed up, but at least it will have reached running temperature.

When you know how to troubleshoot, you'll find your nitro engine a breeze to start. If you just run a few simple tests, your engine will tell you what it needs. Just keep a cool head and be patient, and you'll soon be revvin' and runnin'.

TECH Q&A

Q One of the experienced guys at our track told me to race with a "cold" glow plug on one of the hotter days. He said the engine would run better in hotter weather with a colder plug. I installed a plug that was rated as being "colder" than the one I had been using, but the engine didn't run well. It was flatter on the top end, and I had problems with it stalling. I even-

tually got it to run well enough after some tuning, but I didn't think it was running better. Is there any truth to what I was told about running a colder plug in hot weather?

Ralph Lisi

A The temperature rating of the plug indicates the temperature of its coil during operation and has nothing to do with the air temperature. A "hotter" plug's coil will glow more brightly and at a higher temperature than a "colder" plug's. It has little, if any, effect on an

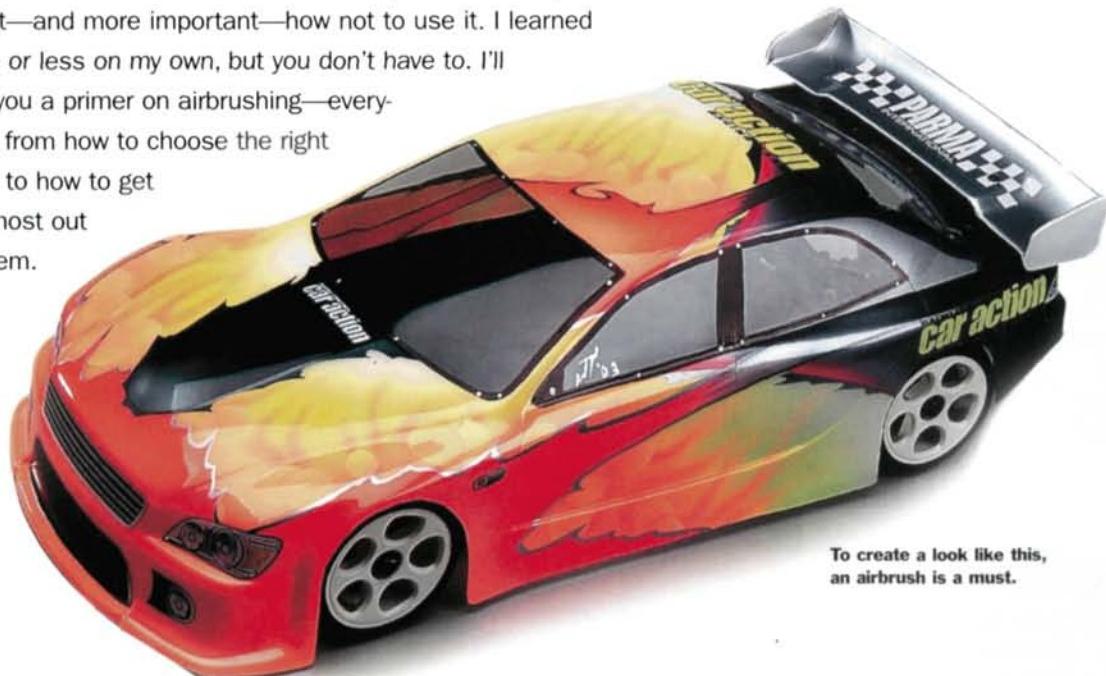
engine's running temperature, so I don't think you were given good advice.

I always run with a "hot" plug because it produces a smoother idle and better punch and top-end performance than a cold plug. Switch to a slightly "colder" plug only in hot weather for reliability. Hot weather requires a leaner mixture setting, and a very lean setting will damage a hot plug more easily. There's a thin sliver of logic to running a colder plug when temps climb, but I prefer a hot plug for consistency of performance.

Airbrushing 101

I first painted bodies with spray cans and brushes, and I learned all sorts of masking techniques. I made it work, but the mess and inconvenience drove me nuts, and I couldn't achieve the look I wanted. There had to be a better way.

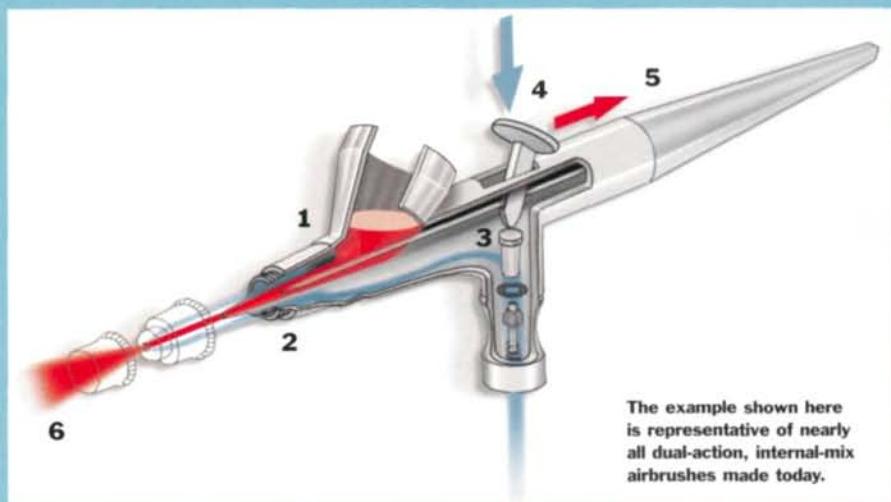
I decided I needed an airbrush. I bought one and figured out how to use it—and more important—how not to use it. I learned more or less on my own, but you don't have to. I'll give you a primer on airbrushing—everything from how to choose the right tools to how to get the most out of them.



To create a look like this, an airbrush is a must.

HOW AN AIRBRUSH WORKS

1. Paint is drawn into the main canister before being sprayed.
2. Paint then flows into the airbrush's needle and into its tapered tip. A long needle runs through the center of the airbrush nozzle and is sealed against an end opening. An air cap and nut assembly holds the paint tip in place.
3. When air flows through the air brush's internal channels, it is directed into the air cap, over the needle/paint tip and away from the airbrush.
4. To control airflow, depress the trigger button on top of the airbrush; it operates a valve at the air-hose junction.
5. To release paint, pull the trigger backward to withdraw the needle from the opening in the airbrush nozzle.
6. Paint is sprayed out through the opening created by the needle retracting out of the nozzle.



The example shown here is representative of nearly all dual-action, internal-mix airbrushes made today.

CHOOSING AN AIRBRUSH



AIRBRUSH ANATOMY

- 1 Paint-spray outlet
- 2 Paint input
- 3 Trigger
- 4 Air-supply input
- 5 Airbrush canister

simultaneously but independently; this results in a high level of control and versatility. Using various combinations of air, paint and trigger activation, all sorts of spray effects can be created. Single-action airbrushes differ in that they have a preset paint control and operate by air activation only. The needle cannot be moved while you're spraying; paint and air are therefore released simultaneously.

KNOW YOUR NEEDLES. Airbrushes are rated according to the size of the opening in the needle. Use larger needle openings to spray liquid masking, thicker paints and paints that contain glitter particles, e.g., metal-flake paints. Use thin needles to apply very thin paint for fine, detailed spraying. Airbrush manufacturers



Bottom-feed airbrushes such as this one use the tapered spray nozzle's venturi effect to pull paint against gravity and into the airbrush.



A gravity-feed airbrush: gravity pulls paint out of the small cup on top. This type of airbrush is best for small details because it doesn't hold a lot of paint.

DUAL-ACTION OR SINGLE-ACTION?

With a dual-action airbrush, a downward trigger movement is used for air and a backward movement is used for paint. With this trigger movement, the venturi action at the paint tip pulls paint out of the nozzle and atomizes it in a spray pattern. The quantity of paint and the width of the spray pattern are controlled accordingly—hence, it's dual action. The key to the dual action is that air and paint are used

rate their airbrush needles in several ways. Iwata, for example, gives the actual measurements of the needle openings; 0.3mm is a popular size. Other manufacturers, however, offer ratings such as "fine," "medium" and "heavy," or they give us numbers; the smallest needle opening offered is a 1, and the larger the opening, the higher the number. For this introduction to the art of airbrushing, I'll use a medium needle (number 3)—a size that will meet most RC painting needs.

PAINT SUPPLY. This may be gravity feed or bottom feed. Gravity-feed systems have a paint reservoir in the top of the main body. Because of this, paint flows easily to the paint-tip nozzle, and this allows a finer spray at lower pressures. The downside is that gravity-feed airbrushes contain a relatively small amount of paint and have to be frequently refilled when you spray large areas. These brushes are useful if you paint lots of fine details or you want to use several colors and use relatively little of each.

Bottom-feed airbrushes use the venturi effect at the nozzle to pull the paint against gravity and into the spray tip. This method works quite well for larger paint jobs, but it requires higher air pressures and is thus slightly less suitable for detail work.



This is Parma/PSE's Faskolor F-1 set; it's a great value and, of course, it works well with Faskolor's paints and glitters (item no. 40260; \$110; price varies with dealer).



The high-end Aztek metal brush kit comes with an assortment of nozzles to suit a variety of uses (A7778; \$220).

IS EXPENSIVE BETTER?

Expensive airbrushes aren't necessary, unless you have a specific need. It's the artist who creates a killer paint job—not the airbrush. A general-purpose airbrush would have dual action, internal mix and bottom feed plus a medium needle—a no.

3 or a 0.5mm. A good-quality airbrush package will cost \$50 to \$100, depending on where you buy it. Look for combination kits that include the airbrush, an air hose, a paint cup and maybe even several tips and nozzles. Many great airbrushes and parts are available at specialty art stores and mail-order outlets such as BearAir Express.

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GETTING THE AIR INTO YOUR AIRBRUSH

In addition to an airbrush, you'll need an air compressor to supply air. Regardless of type, a good compressor should provide clean, dry air at regulated pressure and sufficient air for continuous operation.

There are many airbrush-specific compressors, but you don't have to limit yourself to these models. You can use any shop or contractor-grade compressor as long as it has a pressure regulator. Airbrushes typically need to operate at between 25 and 60 pounds per square inch (psi), whereas shop compressors can often put out well over 100psi—enough to dangerously blow out a hose or your airbrush. Optimally, a compressor should also have an air filter and a moisture trap. Combination pressure regulators/air filter/moisture traps are readily available at home-improvement stores and are relatively inexpensive. All airbrush-specific compressors will have these options.



If you are looking for an airbrush-specific

compressor, consider a couple of other options. Basic compressors run continuously, do not have external air tanks to store extra air for higher than usual requirements and may have a low psi output. This is fine when you use only one airbrush, but it may not be sufficient if you use several airbrushes or a large spray gun. At the very least, check to verify that a particular compressor will provide enough psi and cubic feet of air per minute (cfm) for the job you want to do. High-end models put out more air; they have an external air tank, and they offer nearly silent operation.

new in the shop

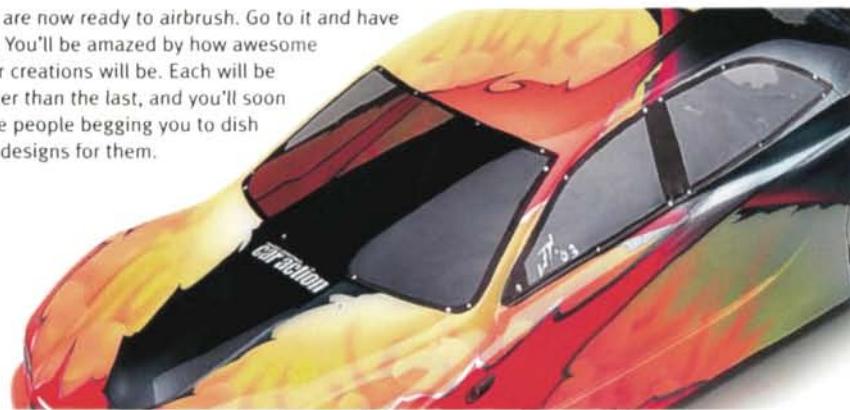
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You are now ready to airbrush. Go to it and have fun. You'll be amazed by how awesome your creations will be. Each will be better than the last, and you'll soon have people begging you to dish out designs for them.



SOURCES

AZTEK (800) 962-6654; testors.com.

BEARAIR EXPRESS (800) 232-7247; bearair.com.

PARMA/PSE (440) 237-8650; parmapse.com.

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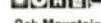
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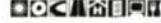


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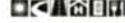


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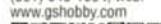


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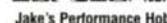
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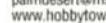
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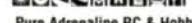
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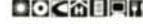
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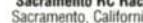
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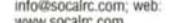
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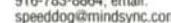
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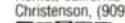
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COLORADO

MHOR R/C Raceway, Aurora, Colorado 80011; Jess A. Brockman, (303) 343-0151; email: questions@mhorrc.com; web: www.mhorrc.com

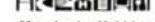


Valley West Off-Road RC Club, Grand Junction, Colorado 81504; Jodie Grein, 970-242-1412; email: gearhed@j.net; web: www.gj.net/~gearhed/wvrcind.html



CONNECTICUT

K&N R/C Speedway Inc., Stafford Springs, Connecticut 06076; Jim or Bill, (860) 684-9896



Manchester Hobbies, Manchester, Connecticut 06040; Jim or Mike Tierinni, (860) 643-4768



R/C Madness, Enfield, Connecticut 06082; Christopher Marcy, (860) 741-6501; email: cmarcy@rcmadness.com; web: www.rcmadness.com



SpeedZone Raceway, Cromwell, Connecticut 06416; David Kahn, 860-632-9278; email: info@speedzone-hobbies.com; web: www.speedzone-hobbies.com



Xtreme Radio Control, New Milford, Connecticut 06776; Paul or Pete, (860) 354-4703



DELAWARE

ESRC, Seaford, Delaware 19973; Bill Auchtonge, 302-734-2757/302-629-3944; email: aeromarine@erols.com



FLORIDA

B&T RC Central, Fort Walton Beach, Florida 32547; Mike or Tim, 850-863-1666



Daytona R/C Racing Assoc., Ormond Bch., Florida 32174; Mike Wichman, 386-677-0898; email: bjji@bestnetpc.com; web: daytona-rc.homeip.net



Farmers Hobby Shop & Raceway, Tampa, Florida 33619; Greg Cardone, 813-248-3314; web: www.farmershobby.com



First Coast Speedway, Jacksonville, Florida 32211; Bobby Phillips, 904-716-0861; web: www.firstcoastautotracing.com



G&C Hobby Raceway, Lantana, Florida 33462; George, 561-547-3812; email: gncobbies2@cs.com; web: www.gncobbies.com



GBS Hobbies, Port St. Lucie, Florida 34952; Track Owner, 561-460-2844; email: qaircraft@bellsouth.net



Grand Prix RC Club, Ft. Pierce, Florida 34945; Luther Peterson, 772-473-2130; email: grandprixhobbies@aol.com



Gulf Coast RC Car Club, Naples, Florida 33105; Mark Benfield, 941-774-7116; email: teamnofear@aol.com



Hobby Central, Pensacola, Florida 32504; Bill McLester, 850-471-9800; email: info@hobbycentralrc.com; web: www.hobbycentralrc.com



Hobby World Raceway, Jacksonville, Florida 32210; Greg, (904) 772-9022



Kissimmee R/C Auto Racing, Kissimmee, Florida 34741; John Rosser, (407) 944-4913; email: john@craftworldflorida.com; web: www.craftworldflorida.com



Miami RC Raceway, Miami, Florida 33176; Mickey Cerra, (305) 630-3714; email: miamircraceway@aol.com



Monza R/C Speedway, Miami, Florida; Ed Delgado, (305) 437-9895



Morris Kohl's Raceway and Hobby Shop, Tampa, Florida 33604; Morris Kohl, (813) 931-1626



My Rose Hobbies & Crafts, Jupiter, Florida 33458; Mark Watson, (561) 744-3800



NORRA, Naples, Florida 34104; Rob Dondoer, 239-417-1099; web: www.norra.mainpage.net

Pro Hobbies Speedway, Apopka, Florida 32712; Jim, (407) 886-4615; email: phobby@juno.com

Sarasota RC Speedway, University Park, Florida 34201; Jim Wilson, (941) 358-7047

South Palm Beach Racers, Boca Raton, Florida 33486; Mike Fazio, 561-338-5367; email: epine01@bellsouth.net; web: http://communitylink.gopbi.com/group/s/pbrcclub

Superior Hobbie R/C Parking Lot Racing, Casselberry, Florida 32707; (407) 834-9299; email: racing@superiorhobbies.com; web: www.superiorhobbies.com

SWF RC Car Club, Fort Myers, Florida 33907; Mike Nardone, 941-278-1295; email: swfrcarclub@yahoo.com; web: swfrcarclub.tripod.com/swfrcarclub

Tallahassee R/C Speedway, Tallahassee, Florida 32301; Tim Cook, 850-514-3365; email: idothre@hot-mail.com; web: www.geocities.com/rdcc1/rrccars.htm

Tampa R/C Raceway, Seffner, Florida 33584; Carole Raimondi, 813-655-6366; email: carolehobbytown@aol.com

Treasure Coast R/C Club, Palm City, Florida 34990; Doug Goethel, 772-283-2260; email: 1ringo@gate.net

West Coast R/C Club, Lutz, Florida 33549; J.R. Sanyet, President, 813-991-0168

GEORGIA

Augusta R/C Racer's Club, Augusta, Georgia 30909; Darren, 706-860-5608; web: Augusta.rc.freehomepage.com

KEY TO SYMBOLS

	Indoor
	Outdoor
	Off-road
	On-road
	Oval
	Dirt oval
	Carpet
	Concrete
	Asphalt
	Minis & Micros
	On-site hobby shop
	AC power
	Auto lap counting
	Food available

Dalton Motorsports. Dalton, Georgia 30721; Keith Martin, 706-226-6699; email: dms0@aloteo.net



Echeconee Superspeedway. Macon, Georgia 31216; Clifford Kline, 478-256-2032; email: gtock1000@aol.com



Hobby Town Raceway. Columbus, Georgia 31909; Frank Bastos, (706) 660-1793; email: fbastos@mindspring.com; web: www.hobbytown.com



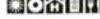
Primetime Raceway. Calhoun, Georgia 30701; Tommy Jackson, 706-625-9037; email: primetimehobby@gcinternet.net; web: primetimehobby@gcinternet.net



SCORE-Phil Hurd Raceway. Savannah, Georgia 31406; Pat Rossetti, Club President, 912-920-2668; email: rossped@msn.com; web: www.score-racing.org



The Flight Box Hobby Shop. Rome, Georgia 30161-6826; Leslie Duke, (706)-234-3014



GUAM

Guanah Off-Road Racers Manglao. Dededo, Guam 96929; Mr. Yoshimura, 671-637-8682; email: thumbtack2@yahoo.com; web: guanahracers.netfirms.com



HAWAII

A.S.I. Racing. Kapaa Kauai, Hawaii 96746; Arnold Morales, 808-821-8132



Radio Control Assoc./Alaa Park Raceway. Pearl City, Hawaii 96782; Ace R/C Products, (808) 456-1279



Sandy Flemings. Pearl City, Hawaii 96782; Dave Caldwell, 808-456-7272; email: info@formula1-rc.com; web: www.formula1-rc.com



IDAHO

Almosta Ranch R.C.s. Twin Falls, Idaho 83301; Casey Clements, (208) 733-8667; email: james_casey-clements@hotmail.com



Capital Dirtburners. Boise, Idaho 83702; Joe Thompson, 208-466-6334; email: interarchitect@yahoo.com; web: communities.msn.com/capitaldirtburners



DM Raceway. Pocatello, Idaho 83201; Mike Buffalo, 208-233-8163; email: mike@dmraceway.com; web: www.dmraceway.com



ILLINOIS

AJs Raceway & Hobby. Dekalb, Illinois 60115; AJ, 815-756-2772; web: www.ajsraceway.com



C&R Hobbies. Milford, Illinois 60953; Ray Craighead, 815-889-4073; email: thomas@milfnet.net



C.I.R.C.A. Jacksonville, Illinois 62650; Randy Tendick - Sport-N-Hobby, (217) 245-1375; web: http://home.mchsi.com/~circa



His N Hers Hobbies Raceway. Bloomington, Illinois 61701; Kevin Turek, 309-827-0204; email: hisnhobbies@aol.com; web: www.hisnhershobbies.com



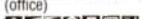
HobbyTown USA. Oak Park, Illinois 60301; Mark or Fred, (708) 445-8056; email: htupol@aol.com



Machesney Park Raceway. Machesney Park, Illinois 61115; Gina, (815) 282-1311; email: mpr30@aol.com; web: www.mpr30.homestead.com



Monee R/C Raceway. Monee, Illinois 60449; Roy or Roberta Moody, (708) 534-2422 (track), (708) 799-5597 (office)



Primetime Hobbies. Tremont, Illinois 61568; Don Davis, 309-925-9999; email: staff@primetimehobbies.com; web: www.primetimehobbies.com



Radio-Active Raceway. Bolingbrook, Illinois 60440; Jim, (630) 759-7557; email: RCVoltar@aol.com



Venture Raceways. Libertyville, Illinois 60048, (847) 549-6963



INDIANA

Bremen Racing Ent. Bremen, Indiana 46506; Dale Heuberger, 219-546-3807



Duneland Hobbies & Raceway.

Portage, Indiana 46368; Ron, 219-763-1610; email: RTrobaugh1@msn.com; web: www.dunelandhobbies.com



Hobby Barn Raceway. Terre Haute, Indiana 47802-9694, (812) 299-5773



P&T Hobbies and Raceway. Mitchell, Indiana 47446; Paul Weber or Tom Logsdon, (812) 849-6666; email: ptthobby@iquest.net; web: www.ptthobby.com



Pete Russell's R/C Speedway. Elkhart, Indiana 46516; Pete Russell, 574-293-1827



R/C World of Indiana. Lynn, Indiana 47355; Joe Kolp, (765) 874-2464; email: rcworld@rcworld.com; web: www.rcworld.com



RC Barn. Monroe, Indiana 46772; Mark Lengerich, (219) 692-6600; email: bigdaddy@adamswells.com; web: www.rcbarn.com



RCR CR Raceway. Boonville, Indiana 47601; Scott Payne, 812-477-9661; email: spdracer@speedex.net; web: www.rcrccr.com



Schoolyard RC Speedway. Lagrange, Indiana 46761; David W. Bryan, 260-463-3558; email: dwbryan@loci.net; web: www.rcspeedway.net



Showtime Lot Racing. Fort Wayne, Indiana 46819; Mike Romines, (219) 478-6099; web: fortwaynerpcark.tripod.com/



IOWA

Ames Radio Control Assoc., Ames, Iowa 50014; Ryan Davis/Brad Scandrett, 515-231-3813/515-432-0467; email: Davismotorsp@aol.com



Dubuque R/C Speedway. Dubuque, Iowa 5202: Craig Schmal, 563-587-0218; email: crraig7@aol.com; web: www.geocities.com/dbqrc



Hobby Haven. Des Moines, Iowa 50322; Rick Marble, (515) 276-8785; web: www.hobbyhaven.com



Independence. Independence, Iowa 50644; Eugene Bachman, 319-266-3857; email: BachmanE2@hotmail.com



Iowa City R/C Racing Association. Iowa City, Iowa 52240; Hobby Corner, (319) 338-1788



IROAR-Vinton Raceway @ Vinton Roller Rink. Cedar Rapids, Iowa 52402; Ed Karr, 319-362-1291; email: boxcarhobby@aol.com



Manly R/C Club. Manly, Iowa 50456; Bruce Hill, (641) 454-2025



Marble's Raceway. Des Moines, Iowa 50317; Rick Marble, (515) 262-7507



Radio Control Raceway Park. Fort Dodge, Iowa 50501; Bernie Halverson, (515) 576-3780 (515-571-1717 Race Day); email: bhalverson@dogenet.com



RiverFront Speedway. Fort Dodge, Iowa 50501; Bernie Halverson, 515-576-3780 (515-571-1717 Race Day); email: bhalverson@dogenet.com



Wild Bill's Raceway. Knoxville, Iowa 50138; William Anderson, Jr., 641-842-5973; email: wildbilz@iowatelecom.net; web: www.wildbillsracing.com



D&B Raceway. Menlo, Kansas, Ron Ball, (785) 855-2370



KANSAS

Coyote Raceway. Lexington, Kentucky 40505; Steve M., 859-253-9330; email: coyoterace1@hotmail.com; web: www.coyoteraceway.com



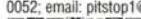
Dixon's R/C RaceWay. Hazard, Kentucky 41701; Jeff Dixon, (606) 436-4820; email: jefdr1@hotmail.com



Mayking R/C Speedway. Mayking, Kentucky 41837; Jon Fields, 606-633-4700; email: jon1@se-tel.com



Pit Stop Hobbies. Paducah, Kentucky 42003; Robert or Rodney, 270-443-0052; email: pitstop1@apex.net



R.C. WOW. Falmouth, Kentucky 41040; John P. Jones, (859) 654-1700; email: rcwow@fuse.net; web: www.rcwow.com



Trio Hobbies & R/C. Radclift, Kentucky 40160; Maurice Johnson, (502) 351-7547



Wildcat Speedway. Nicholasville, Kentucky; David Bowles, 859-272-0231



LOUISIANA

Fast Pace Hobbies. Alexandria, Louisiana 71301; Joseph or Casey Torlala, 318-561-2070; email: fastpacehobbies@aol.com



Gator R/C Raceway. Moss Bluff, Louisiana 70612; Tony Diaz, 337-853-3206; email: keithsjac@aol.com; web: homepage.mac.com/kmaples/



Hwy. 44 Hobby Shop. Gonzales, Louisiana 70373; Eric Olmstead, (225) 644-1773; email: eric209@aol.com



Red Stick R/C Raceway. Baton Rouge, Louisiana 70814; Michael Pino, 225-218-1002; email: redstick-raceway@aol.com; web: www.redstick-raceway.com



St. Charles RC Speedway. Destrehan, Louisiana 70047; Al Cazalot, (504)764-0625; email: stcharlesracer@home.com; web: members.home.net/stcharlesracer



MAINE

Central Maine R/C Speedway & Hobbies. Fairfield, Maine 04963; David Prescott, (207) 453-4588; email: rcracer@mainet.net



Clay Bowl R/C Hobbies. Greene, Maine 04236; Pat Cap, (207) 946-5003



MARYLAND

Coles Race Way. Waldorf, Maryland 20602; Cole Brinfield, (301)-843-1386; email: kbrinfield@cs.com



GPA Hobbies. Crofton, Maryland 21114, 301-858-0004



HobbyTown USA. Glen Burnie, Maryland 21061; David Parkison, 410-590-4950; email: racing@mdhobbytown.com; web: mdhobbytown.com



The Track. Gaithersburg, Maryland 20877; Mimi Wong, (301) 417-9630; email: mimitrack@yahoo.com; web: www.rctrack.com



MASSACHUSETTS

Big Boys Toys. Fall River, Massachusetts 02723; Track Owner, 508-677-9400



East Templeton Model Raceway. Templeton, Massachusetts 01468; Keith Anderson, 1-978-632-1619; email: kglowplug@comcast.net; web: glowplug.com



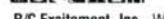
Hi-Tech Hobbies. Raynham, Massachusetts 02782; Ruben, (508) 880-5373



Megadrome Raceway. North Adams, Massachusetts 01247; Bob Blanchette, 413-743-7223



Northboro Speedway. Northboro, Massachusetts 01532; Bob Trimble, 508-393-8073 or 393-2691



R/C Excitement, Inc. Worcester, Massachusetts 01605; Todd Anderson, 508-753-8676; email: rcexcitement@aol.com; web: www.rcexcitement.com



RPM RC Raceway. Abington, Massachusetts 02351-1094; Richard Tonetti, (781) 857-2300; email: hobotown@AOL.com; web: www.rphobbyshops.com



Kevin's Off-Road Raceway. Crookston, Minnesota 56716-2317; Kevin Altepeter, (218) 281-7523; email: kavip@krcproducts.com; web: www.krcproducts.com



National Speedway. Fridley, Minnesota 55432; Steve Hedenland, 763-571-9283; email: mrtp@national-hobby.com; web: www.nationalhobby.com



Northwoods Hobby Raceway. Brainerd, Minnesota 56401; John or Doug, (218) 829-9257



Twin Cities Hobby & Raceway. Brooklyn Park, Minnesota 55443; Mark O'Brien, 763-569-5069; email: woodluster@msn.com; web: www.twincityhobby.com



Meridian RC Speedway. Meridian, Mississippi 39302; Joe or Pearce, 601-483-7000



Small Cars Unlimited. Jackson, Mississippi 39212; Ed Hill, 601-372-3278; email: fast@smallcarsunlimited.com; web: www.smallcarsunlimited.com



X-Treme RC. Saucier, Mississippi 39574; Marty Capers, (228) 539-2004



Jons Hobby. Mt. Pleasant, Michigan 48858; Jon Beutler, (517)773-5412; email: jonthobby@earthlink.net; web: www.jonshobby.com

JT Superspeedway. Battle Creek, Michigan 49015; Jerry or Sam, 616-965-0116

Larry's Performance RC Carpet Track. Sterling Heights, Michigan 48314; Larry, 565-997-4840; email: lprcs@qwest.net

Lazer RC Speedway. Adrian, Michigan 49221; Russ Johnson, (517) 263-2806

N.M.R.C.C. Speedway. Gaylord, Michigan 49735; Gabe, (898) 732-3963; email: hobby-toy@voyager.net

R&L Hobbies & Racing. Portage, Michigan 49002; Rex Simpson, (616) 323-3686; web: www.rlhobbies.com

R.A.C.E. Inc. Jackson, Michigan 49203; Sam Sprang, (517) 787-9161

Raw Roots Race Tracks. West Olive, Michigan 49460; Roy Bennink, (616) 399-9338

Village Hobbies. Hesperia, Michigan 49421; John Fosdick, 231-854-1374; email: vhrcing@triton.net

Village R/C Raceway. Decatur, Michigan 49045; Chuck Nolke, (616) 423-7878

Country R/C Raceway Park. Belvoir, Minnesota 56214-8115; Charles L. Steffl, 507-641-8115

J's Radio Control Race Park. Starbuck, Minnesota 56381; Jay Campbell, (320) 239-4827

Hobbies In Motion Raceway, Springfield, Missouri 65803; Matthew Froning, 417-886-9621; email: mrkid-turism@aol.com; web: www.goc.com



North Missouri Raceway, Chillicothe, Missouri 64601; Billy Johnston, (660) 646-1120



Novelty R/C Raceway & Hobbies, Novelty, Missouri 63460; Rex & Jena Franke, 660-739-4530; email: rex_jena@noveltyrc.com; web: www.noveltyrc.com



Ozarks R/C Raceway, Springfield, Missouri 65803; Gene Rhodes, 417-873-9350(Track); 417-742-4376(Home); email: OzarksRaceway@aol.com



RCTRAX Racing Club of Central Missouri, Hallsville, Missouri 65255; Gary Philippe, 573-442-8183; email: philip74@verizon.net



Real Blue Vue R/C, Kansas City, Missouri 64133; Steve Hale, (816) 358-0238; email: hrealrc@aol.com; web: www.geocities.com/real_rc_raceway



Real R/C Raceway, Pleasant Hill, Missouri 64080; Steve Hale, (816) 540-5584; email: hrealrc@aol.com; web: www.rclrc.com



Showtime Speedway, Bakersfield, Missouri; Don Risner, (601) 203-1481

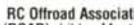


MONTANA

Garden City R/C Speedway, Missoula, Montana 59801; Brian Culp, (406) 549-7992; email: gardencityrc@msn.com



Magic City Racers, Billings, Montana 59102; Bryan Grummert, 406-656-8266; email: jsavves@ptrsolution.net; web: www.magiccityrc.com

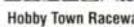


RC Offroad Association of Racing (ROAR), Libby, Montana 59923; Jamie, 406-293-6506; email: sharkboyel@hotmail.com



NEBRASKA

Hadar R/C Raceway, Norfolk, Nebraska 68701; John Schoenauer, (402) 644-7922



Hobby Town Raceway, Lincoln, Nebraska 68505; Chris or Chad, 402-434-5056; email: eaststore@aol.com



Hobby Town USA Raceway Park, Lincoln, Nebraska 68508; Chad or Chris, 402-434-5056; email: east-store@aol.com



NESCAR Raceway, Grand Island, Nebraska 68801; Steve Blayne, 308-382-0920; email: spinkgi@nebi.com



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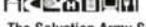
- Indoor
- Outdoor
- Off-road
- On-road
- Oval
- Dirt oval
- Carpet

- Concrete
- Asphalt
- Minis & Micros
- On-site hobby shop
- AC power
- Auto lap counting
- Food available

O.N.R.O.A.D., Omaha, Nebraska 68104; CoRK Jacobs, (402) 556-8674



OTWG Carpet Raceway, Norfolk, Nebraska 68701; John Schoenauer, (402) 644-7922



The Salvation Army Speedway, Omaha, Nebraska 68164, 402-734-3414



NEVADA

Dansey's Indoor R/C & Hobbies, Las Vegas, Nevada; David Lugo, (702) 453-RACE or (888) 675-8963; web: www.dansseys.com



Las Vegas R/C Raceway, Las Vegas, Nevada 89139; Patrick Quinn, 702-365-1396; email: patrickquinn98@lvcvm.com; web: www.lasvegasracerway.com



T-Rix bikes & R-C shop, Elko, Nevada 89001; Gary Perkins, (775) 777-8804; email: mtnman14k@hotmail.com



NEW HAMPSHIRE

Hill Top R/C, Troy, New Hampshire 03465; Pete Bastoni/Jim MacPherson, 603-242-3222; email: hilltoprc@metzro.net; web: www.hilltoprc.com



Lakes Region R/C Speedway, Gilford, New Hampshire 03246; Louie Blais, 603-524-2909; email: racing@lakesregionrc.com; web: www.lakesregionrc.com



RT 106 Racepark, Pembroke, New Hampshire 03275; David Daniels, 603-224-7223; email: david@collectracing.com; web: www.106racepark.com



NEW JERSEY

America's Hobby Center Inc., North Bergen, New Jersey 07047; John Many, (201) 662-0777; web: www.ahc1931.com



Back Track Raceway, Hammonton, New Jersey 08037; Bob W., 609-214-5016



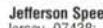
Checkerboard Raceways, Elwood, New Jersey 08217; Ray Murray, 856-629-9413; email: RaysTrack@webtv.net



Family Hobbies Raceway, Vineland, New Jersey 08360; Linda Vogel, 856-696-5790; email: familyhobbies@yahoo.com; web: familyhobbiesraceway.com



Jackson RC Club, Jackson, New Jersey 08360; Al Sardino, 732-364-6422; email: Tazzyd@optonline.net; web: www.jacksonrcracing.com



Jefferson Speedway, Oak Ridge, New Jersey 07438; Jim, (973) 697-7525



Millville R/C Oval & Roadcourse, Millville, New Jersey 08332; William Densto, 856-327-4640



On Trax Hobbies, Browns Mills, New Jersey 08015; Joseph DiGirolamo, (609) 735-0422



Pottbelly R/C Speedway, Pitts Grove, New Jersey 08360; Drew Anastasio, 856-207-2495; email: pottbelly@potbellysrc.com; web: www.pottbellysrc.com



South Jersey Cost Controlled Racing, Sicklerville, New Jersey 08081; Ray Murray, 856-629-9413; email: RaysTrack@webtv.net; web: www.sjccr.com



SpeedPro Dragway, Elizabeth, New Jersey 07206; Albie Niziolek, 908-351-5080; email: funnycar176@aol.com; web: www.speedpro.org



The Race Place, Farmingdale, New Jersey 07731; John Fary, (908) 938-5215



Wacky RC Raceway, Roselle, New Jersey 07203; Tony Williams or Kimble Wright, (908) 241-6700

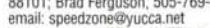


NEW MEXICO

Albuquerque R/C Off-Road Raceway, Albuquerque, New Mexico 87120; Bill Mitchell, (505) 250-3411(m); (505) 898-6181(h); email: info@rcDirtTrack.com; web: www.rcDirtTrack.com



Speed Zone, Clovis, New Mexico 88101; Brad Ferguson, 505-769-1737; email: speedzone@yuca.net



NEW YORK

BarnStormers RC Raceways, Chester, New York 10198; Lou Sysma, 845-469-BARN(2276) or 469-6468; email: iamsysma@hotmail.com; web: www.barnstormersrc.com



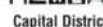
Brennan's RC Hobbies, Vernon, New York; Bill or Tom Brennan, (315) 829-4930



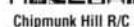
Brooklyn Hobbies, Brooklyn, New York 11234; Chris Palermo, 718-951-2000; email: brooklynhobbies@aol.com; web: www.brooklynhobbies.com



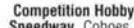
Bruckner Racing, Bronx, New York 10465; Thomas Baffers Sr., (800)-288-8185



Capital District Radio Controlled Stock Car Club, Rensselaer, New York 12144; Eric Conradi, 315-482-7128; email: cdrcsc@hotmail.com; web: www.cdrccracers.50megs.com



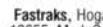
Chipmunk Hill R/C Speedway, Theresa, New York 13691; Ted or Pete House, (315) 628-5065



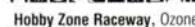
Competition Hobby Supplies & Speedway, Cohoes, New York 12047; Howie Cummings, 518-786-3622; email: howard.cummings@verizon.net; web: www.competitionhobbiesupplies.com



East Coast R/C Hobbies, Brooklyn, New York 11204; John Giangrande, 718-627-3814



Fastraks, Hogansburg, New York 13655; Mark Castonguay, (518) 358-3686; email: froghobb@nrothnet.org; web: www.fastraks.8m.com



Hobby Zone Raceway, Ozone Park, New York 11417; Brian, Sean or Adam, (718) 641-9001; email: moonchaserwolf@aol.com



Ilil Wheels Raceway, Oswego, New York 13126; Bill Meyer, 343-6566; email: ililwheelsraceway@hotmail.com; web: ililwheelsraceway.tsx.org



Long Island Raceway, Farmingdale, New York 11735; James, (516) 845-7223; web: www.raceway.com



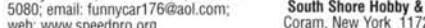
PRO Speedway, Cattaraugus, New York 14719; Marc Pritchard, (716) 257-3101



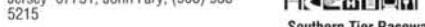
Radio Hill Raceway, Dundee, New York 14837; Bill or Greg, 607-243-8841(Bill); 607-243-7899(Greg)



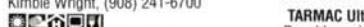
Rampage R/C & Hobbies, Hyde Park, New York 12538; Brian Walker, (845) 229-1379



South Shore Hobby & Raceway, Coram, New York 11727; Benny or Bonnie, 631-696-8500; email: shobby@northeast.net; web: www.southshorehobby.com



Southern Tier Raceway, Owego, New York 13827; Anita Harding, (607) 687-5395



TARMAC Ultimate R/C Raceways, Poughkeepsie, New York 12603; Todd Plass, 845-342-5409(Todd); 845-454-8276(Track-Sundays); email: toddpl@tarmacraceway.com; web: www.tarmacraceway.com



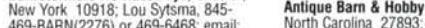
Walt's Hobby, Syracuse, New York 13209; Bruce, 315-453-2291; web: www.walts-hobby.com



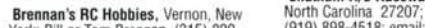
Willis Hobbies R/C Speedway, Mineola, New York 11501; Ken Ford, 516-746-3944; web: www.willishobbies.com



Ohio Valley OffRoad R/C Raceway, Jerusalem, Ohio 43747; Kevin Wilson, (740) 926-1738; email: consol@st.serve.com; web: www.ovr.8M.com



Outlaw Speedway, Lexington, Ohio; Eric Radio, 419-884-0001; email: kramerjc@aol.com; web: rcdrltoval.freesservers.com



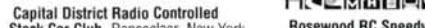
R/C Hobby, Medina, Ohio 44256; Larry Lutz, 330-723-0255; email: kohouty@aol.com



Raceway 42, Mansfield, Ohio 44905; Chris Cates, 419-589-4173; email: mopar340v8@aol.com; web: www.Raceway42.tgo.com



River Rat Racing, Ripley, Ohio 45167; Jon Faris, 937-392-9298; email: honey3@bright.net; web: www.riverratraceway (under construction)



T.S.R.C.A.R., Hamilton, Ohio 45011; Dennis Young, (513) 367-5634; email: scalercar@aol.com; web: www.stateracercars.com



TARCAR, Toledo, Ohio 43617; Bill Bridges, (419) 826-3859



Ultra Racing R/C Hobby and Track, Hamilton, Ohio 45015; Ed Lewis, 513-863-7342; email: UltraRacing@aol.com; web: www.rccaronline.com



Van Wert R/C Raceway, Van Wert, Ohio 45891; Mark Davis, (419) 232-2112



Y-City Hobby & Speedway, Zanesville, Ohio 43701; Kevin McKenna, (740) 455-3025; email: Kevin@ycity-hobby.com; web: www.ycityhobby.com



NORTH DAKOTA

Grand Forks Remote Control Racers, Grand Forks, North Dakota 58201; Dan Miller, 701-746-9910; email: dandmiller@juno.com; web: mulepuah.org/gfrcr



OKLAHOMA

Action Hobbies, Tulsa, Oklahoma 74145; David Cole, (918)663-8998; email: acthobby@aol.com



OHIO

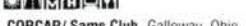
AK Hobby & Raceway, Cincinnati, Ohio 45211; Tim Tolle, (513) 661-7080; email: tim@akhobby.com; web: www.akhobby.com



American Ohio Sprint Car, Wickliffe, Ohio 44092; Gary Waldeheim, 440-944-9966; web: www.aosca.8m.com



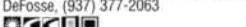
Black Swamp RC Car Club, Toledo, Ohio 43623; Rider Hobbies, 419-843-2931; email: ridersrcclub@webtv.net; web: www.blacksmpwrc.cjb.net



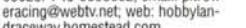
CORCAR/Sams Club, Galloway, Ohio 43119-8732; Bill Stevenson, (614) 870-7159



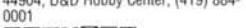
D&J R/C Raceway, Orrville, Ohio 44667; Don, (330) 682-4266



DeFosse Raceway, Ripley, Ohio; Greg DeFosse, (937) 377-2063



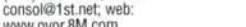
Hoobyland Raceway, Proctorville, Ohio 45669; Craig Harber, 740-886-0520; email: pitroweracing@webtv.net; web: www.hoobylandraceway.homestead.com



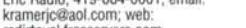
Mid Ohio Dirt Oval, Lexington, Ohio 44904; D&D Hobby Center, (419) 884-0001



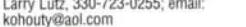
Ohio Valley OffRoad R/C Raceway, Jerusalem, Ohio 43747; Kevin Wilson, (740) 926-1738; email: consol@st.serve.com; web: www.ovr.8M.com



Outlaw Speedway, Lexington, Ohio; Eric Radio, 419-884-0001; email: kramerjc@aol.com; web: rcdrltoval.freesservers.com



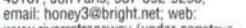
R/C Hobby, Medina, Ohio 44256; Larry Lutz, 330-723-0255; email: kohouty@aol.com



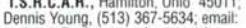
Raceway 42, Mansfield, Ohio 44905; Chris Cates, 419-589-4173; email: mopar340v8@aol.com; web: www.Raceway42.tgo.com



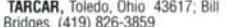
River Rat Racing, Ripley, Ohio 45167; Jon Faris, 937-392-9298; email: honey3@bright.net; web: www.riverratraceway (under construction)



T.S.R.C.A.R., Hamilton, Ohio 45011; Dennis Young, (513) 367-5634; email: scalercar@aol.com; web: www.stateracercars.com



TARCAR, Toledo, Ohio 43617; Bill Bridges, (419) 826-3859



Ultra Racing R/C Hobby and Track, Hamilton, Ohio 45015; Ed Lewis, 513-863-7342; email: UltraRacing@aol.com; web: www.rccaronline.com



Van Wert R/C Raceway, Van Wert, Ohio, 45891; Mark Davis, (419) 232-2112



Y-City Hobby & Speedway, Zanesville, Ohio 43701; Kevin McKenna, (740) 455-3025; email: Kevin@ycity-hobby.com; web: www.ycityhobby.com



Action RC Speedway, Oklahoma City, Oklahoma 73135; Jerry Hawthorne, (405) 670-7770; email: gina@flash.net; web: www.actionrc.com



Adams Creek R/C Speedway, Broken Arrow, Oklahoma 74014; John Beighle, (918) 355-1416



Competition R/C, Oklahoma City, Oklahoma 73149; James or Louise Brown, (405) 634-0809; email: compc@ao.com



Enid R/C Speedway, Enid, Oklahoma 73703; Darin Pendleton, (580) 554-9400; email: darin@enid.com; web: www.enidrcracing.com



HobbyTown USA, Norman, Oklahoma 73072; Todd Jenson, (405) 292-5850



Wings N Things Raceway, Tulsa, Oklahoma 74105; Heath Anderson, (918) 745-0007



OREGON

Competition Racing Association, Portland, Oregon 97230; Mark Taylor, Pres., 503-761-1334; 503-761-0443; email: mark@cra-news.com; web: cra-news.com



Dirt City RC, Albany, Oregon 97321; Doug Vertrées, (541) 791-1089; email: quicktemperr@aol.com



R/C Plus Hobbies Raceway, Salem, Oregon 97302; Ron Smith, (503) 364-9188; email: rcpplus@rcplus.com; web: www.rcplus.com



R/C Speed Center, Medford, Oregon 97501; Gene & Betty Jean Skelton, 541-779-8298



Rose City Scale Racing, Milwaukee, Oregon 97222; Rick Strauss, (503) 631-2929; web: www.rc-cars.com

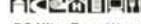


PENNSYLVANIA

Bumps & Jumps RC Speedway, Middletown, Pennsylvania 17057; Chris McKinney, 717-728-4613; email: chrismc@bigfoot.com; web: www.bumpsandjumpsrc.com/



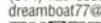
Courtview Raceway, Washington, Pennsylvania 15301; Aaron Stimmell Jr., 724-228-8396



DC Ultra Trax, Warminster, Pennsylvania 18974; David Cowan, (215) 672-5200; web: www.jcrchobbies.com



Dreamboat Hobbies, Warren, Pennsylvania 16365; Louie Dussia, (814) 723-8052; email: dreamboat7@yahoo.com



J&K Hobbies and Raceway, Jersey Shore, Pennsylvania 17740; Jason Carter or Kevin Casper, 570-398-8171; email: rcmania01@msn.com



Kranzel's R/C Raceway & Hobbies, Lemoyne, Pennsylvania 17043; David or Stuard Kranzel, (717) 737-7223; web: www.kranzelsrhobbies.com



Little Plum R/C Hobbies, Lock Haven, Pennsylvania 17745; Larry Duck, (570) 769-1984



Marshall's R/C Raceway, Honesdale, Pennsylvania 18431; Bill or Dot Marshall, (570) 729-7458



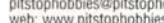
McCullough's Offroad, Sarver, Pennsylvania 16055; Doug McCullough, (724) 352-0116; email: dmccull323@aol.com; web: www.mcculloughsoftroad.com



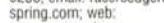
Newville RC Speedway & Hobbies, Newville, Pennsylvania 17241; Randy or Mike, 717-776-5568; email: newvillercspeedway@yahoo.com; web: www.newvillercspeedway.com



Pit Stop Hobbies, Mount Joy, Pennsylvania 17552, (717) 653-6222; email: pitstopobbies@pitstopobbies.net; web: www.pitstopobbies.net



Racers Edge R/C Racing & Hobbies, Smethport, Pennsylvania 16749; Rick Morgan or Johna Simar, (814) 887-9256; email: racersedgec@mindspring.com; web: www.racersedgec.com



RB Motorsports & Hobby, Northumberland, Pennsylvania 17857; Rick Bunting, (570) 473-8711



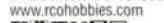
RC Avenue II, Bradenville, Pennsylvania 15650; Chris Demyan, 724-537-9592; email: 12ss@msn.com



RC Dirtbangers Club, Windber, Pennsylvania 15963; Bruce Schmidt, (814) 266-4118; email: rkidd1@cs.com



RC Outfitters, Hanover, Pennsylvania 17331; Chris Shaffer, (717) 633-9490; email: thestore@cohobbies.com; web: www.cohobbies.com



Riverside Raceway, Warren, Pennsylvania 16365; Jeff, (814) 723-4211



Staub Bros. R/C Speedway, Gettysburg, Pennsylvania 17325, Todd or Scott Staub, 717-334-8488; web: www.staubbrothers.com



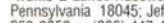
The Raceway at River Junction, Beaver, Pennsylvania 15009; Sam or John, (724) 728-5571; email: riverjct@stargate.net



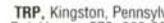
Thunder Road Raceway, Limerick, Pennsylvania 19468; Barry or John, 610-831-8898; email: xslogodx@aol.com; web: www.towbarr.com



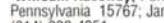
Track 84, Narren, Pennsylvania 17555; Andrew Flexer, (717) 354-6503



Trains & Lanes Raceway, Easton, Pennsylvania 18045; Jeff Setzer, (610) 253-8850 or (800) 447-4891; email: trainslanes@aol.com



TRP, Kingston, Pennsylvania 18704; Rob Reyer, 570-283-3066; email: rcr099@aol.com



WillCam Raceway, Punxsutawney, Pennsylvania 15767; James Campbell, (814) 939-4251



PUERTO RICO

Bayamon R/C Park, Bayamon, Puerto Rico 00956; Damian Cruz & Javier Rivera, (787) 869-8092 & 401-2770; email: damian@bayamonrcpark.com; web: www.bayamonrcpark.com



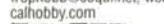
Hi-Speed C Raceways, San Juan, Puerto Rico 00926; Carlos Ortiz, (787) 283-0198; email: hispeed@hotmail.com; web: www.hispeedhobby.com



Mech Tech Touring Park, Caguas, Puerto Rico 00725; Humbert (Tito) Lizardi, (787) 739-1572; email: tlizardi@hotmail.com



Tropical Raceway Track, Manati, Puerto Rico 00674; Hector Pabon/George Pabon, 787-785-9529; email: tropicohobby@coqui.net; web: www.tropicahobby.com

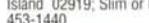


RHODE ISLAND

Insane Track, Cranston, Rhode Island 02907; Jose Jimenez, 401-467-8878; email: chevygo8@aol.com; web: www.insanehobbies.homestead.com



SK Hobbies Inc., Johnston, Rhode Island 02919; Slim or Keith, (401) 453-1440



SOUTH CAROLINA

Atomic Racers, Aiken, South Carolina 29803; Bill Jackson, 706-855-0846 or 803-725-1664



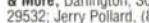
Carolina R/C Speedway, Easley, South Carolina 29640; David, 864-295-1209; email: cprahlrc@mindspring.com; web: www.carolinarc.com



D&S Hobbies R/C Track, Hartsville, South Carolina 29550; Don Dietz, 843-383-0017; email: dshobbydon@aol.com; web: www.dshobbies.com



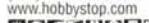
Darlington R/C Raceway at Hobbies & More, Darlington, South Carolina 29532; Jerry Pollard, (843) 393-0355; web: www.hobbiesmore.com



Hi Voltage Raceway, Anderson, South Carolina 29625; Whitner Bowen, 1-864-225-8680; email: Jahlion247@aol.com



The Grove Racing Center, Rockhill, South Carolina 29730; Don Faris, (803) 327-4121; web: www.hobbystop.com



SOUTH DAKOTA

Dakota Off-Road Racers, Aberdeen, South Dakota 57401; Kevin, 605-225-5223



Grassland Racers, Black Hawk, South Dakota 57718; Ryan Logan, (605) 787-5632



Triple B, Winner, South Dakota 57508; Broc Stout, (605) 842-2699

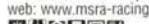


TENNESSEE

Hobby Town USA, Franklin, Tennessee 37067; Bobby Mills, (615) 771-7441; email: htlu226@aol.com



Mid-South Racing Association, Memphis, Tennessee 38133; Michael Feliciano, 901-268-7969; email: michael.feliciano@expeditors.com; web: www.msra-racing.com



MSA R/C Racing, Crossville, Tennessee 38555; D.R. Findley, (931) 456-0027



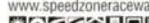
Need For Speed Raceway R/C, Chattanooga, Tennessee 37415; Ronnie Cox, (423) 876-9019



Robertson's R/C Raceway, Jackson, Tennessee 38301; Travis Robertson, 731-423-6984; email: RobertsonsRC@aol.com



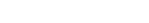
SpeedZone Raceway & R/C Hobbies, Sweetwater, Tennessee 37874; Mike Henderson, 423-351-0055; email: speedzon@msn.com; web: www.speedzoneroceway.com



Stateline Village Raceway, Ducktown, Tennessee 37326; Len James, 423-496-5006; email: statelin@ellijay.com



Tropical Raceway Track, Manati, Puerto Rico 00674; Hector Pabon/George Pabon, 787-785-9529; email: tropicohobby@coqui.net; web: www.tropicahobby.com



TEXAS

W.O.W. Raceway, Beech Bluff, Tennessee 38313; Brad Jones, 731-427-1625; email: wowracer@hotmail.com; web: go.to/wowracing



215 Speedway, Abilene, Texas 79602; Clyde Gardner, (915) 673-2351



Al's Hobbies, San Antonio, Texas 78227; Alfonso Robles, 210-645-1050; email: alshobbies@usa.com; web: www.alshobbiesusa.com



Austex RC, Austin, Texas 78757; Michael, 512-458-2324; web: www.austexrc.com



B&B R/C Hobbies, Big Spring, Texas 79720; Walter Bumbulis, (915) 263-1790; email: b&brchobbies@apex2000.net



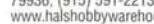
Big Mike's R/C Raceway, Longview, Texas 75604; Mike Sumrow, 903-297-7814



Drycreek Raceway, Greenville, Texas 75402; Mickey Alphin, 903-527-5381; web: www.pulse.wl/drycreek



Finishline Raceway, Hurst, Texas 76053; Damon Darnall, (972) 404-0463; email: finishline@ev1.net; web: http://users.ev1.net/~finishline/index.htm



Hal's Hobby Raceway, El Paso, Texas 79936, (915) 591-2213; web: www.halshobbywarehouse.com



Hobby Center Race Track, Houston, Texas 77058; Issac Ben-Ezra, 281-488-8697; email: Hobbycenter@issac-smmodels.com; web: www.hobbycenter.cc



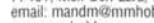
Hobbytown USA, San Antonio, Texas 78209; Clark, (210) 829-8697; fax (210) 829-8707



Indy R/C World, Garland, Texas 75041; Steve Webster, (972) 271-4844; fax (972) 271-4502; web: www.indyrcworld.net



Hobby Town USA, Franklin, Tennessee 37067; Bobbi Mills, (615) 771-7441; email: htlu226@aol.com



K & M Racing, New Caney, Texas 77357; Brent Mahafay, (281) 399-9777



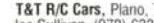
M & M Hobby Center, Bellair, Texas 77401; Meir Ben-Ezra, 713-661-7137; email: mandm@mmhobby.com; web: www.mmhobby.com



MBRC, Dallas, Texas 75093; Mike Battile, email: info@mbrc-racing.com; web: www.mbrc-racing.com



Mike's Hobby Shop Superstore & Raceway, Carrollton, Texas 75006, 972-242-4930; web: www.mikesbyshop.com



Reflex R/C, Houston, Texas 77055; Joseph Chen, (713) 464-4458; web: www.reflexrc.com



T & M Raceway R/C Drag Racing, Addison, Texas 75244; Marvin Jackson, (972) 416-0445; email: mjakson@tmraceway.com; web: www.tmraceway.com



T & T R/C Cars, Plano, Texas 75024, Joe Sullivan, (972) 633-2470



The Rollcage, Greenville, Texas 75402; Guy Allen, (903) 883-0332; email: rollcage2000@etherollcage.com; web: www.therollcage.com

Thompsons RC Raceway, Lufkin, Texas 75901; Mark Thompson, (936) 637-0093



W.E.S. Hobby Race, Beaumont, Texas 77701; Marty Walker, (409) 839-4929



X-Treme Hobbies, Round Rock, Texas 78664; Mark Santos, (512) 388-3819



UTAH

Hobby Stop Raceway, Riverdale, Utah; Todd Hamilton or Beazer Martin, (801) 622-0841



Intermountain R/C Raceway, Magna, Utah 84044; David Mott, 801-250-8303; email: rcmother1@aol.com; web: members.aol.com/rcomother1



Outback Raceway, Ordin, Utah 84404; Steve Brown or Beazer Martin, 801-726-3458; email: Steve@rmrcr.com or Beazer@bbibbs.com; web: www.rmrcr.com or www.beazershobbies.com



Vision Hobby, Orem, Utah 84057; Ken Rice, (801) 226-6226



VERMONT

Empire Hobbies Off-Road Raceway, Saint Albans, Vermont 05478; Scott or Jen, 877-446-2243; email: empirehobbies@surfglobal.net; web: www.empire-hobbies.com



R/C Toy Box Hobbies & Tracks LLC, Saint Johnsbury, Vermont 05819; Raymond Richard, 802-748-1030; email: ray@rctoybox.com; web: www.rctoybox.com



Brown Brothers Hobbies, Dumfries, Virginia 22026; Joe or Bob Brown, 703-221-5746; email: joe@bbhobbies.com; web: www.bbhobbies.com



DRCW Raceway, Virginia Beach, Virginia 23454; Les Modlin, 757-340-6681; web: www.debbiesrcworld.com



Hampton Roads R/C Drag Club, Virginia Beach, Virginia 23452; Gary Nelson, 757-399-8645; email: Garry@gsdracing.com;

Stream Hobby Shop, Newport News, Virginia 23605; Rusty Kennedy, 757-591-0720; email: streamrc@aoi.com; web: www.streamhobbyshop.com



The Tilt Yard, Dayton, Virginia 22821; Homer, 540-828-3476; email: homers@tiltyard.com; web: www.tilt-yard.com



Thunder Road RC Speedway, Gordonsville, Virginia 22947; Robert Bingler, 434-296-6549; email: tripod@thunderroaddr.com; web: www.thunderroaddr.com



Tidewater R/C Speedway, Inc., Hampton, Virginia 23663; Jim Pike, Rob Marsette, Dave Pritchard, (757) 723-8927; email: zeeya31@hotmail.com



WASHINGTON

A-Main Raceway, Vancouver, Washington 98685; Monty Coleman, (360) 571-8404; web: www.amainraceway.com



Burien Toyota R/C, Seattle, Washington 98148; Ray Meek, (800) 654-6456



Cedardale Raceway, Mount Vernon, Washington 98273; Craig, 360-755-9464



Fantasy World Raceway, Tacoma, Washington 98408; Dave Kleinman, (253) 473-6223; email: sales@fantasyworldhobbies.com; web: www.fantasyworldhobbies.com



Four Season R/C Racing, Olympia, Washington 98506; Gary and Sharon Brown, (360) 491-2430



Hank Perry Raceway, Spokane, Washington 99203; Hal Hudson, 509-879-3503; email: haludson@msn.com



HobbyTown USA, Tacoma, Washington 98408; HobbyTown USA Shop, (253) 474-7787



HobbyTown USA, Lynnwood, Washington 98037; Rich or Jamie, 425-774-0819; email: rhobbytown@aol.com



Paradise Raceway and Hobbies, Spokane, Washington 99207; Mark, 509-483-1843; email: paradise@hot-mail.com; web: www.websellers.com/paradise



Race City, Auburn, Washington 98002; Bruce, (253) 939-2515; email: auburn@pacifier.com



Rain City RC Raceway, Lynnwood, Washington 98036; Pete or Debbie Cartwright, 425-776-8241; email: info@raincityraceway.com; web: www.raincityraceway.com



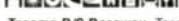
Redmond Hobbies Raceway, Redmond, Washington 98052; Stan Ng, (425) 885-3639; email: info@redmondhobbies.com; web: www.redmondhobbies.com



Schmidt's Auto Parts, Marysville, Washington 98271; Jon Failla, (360) 653-8838; web: www.schmidtscraceway.com



Spokane Indoor Raceway, Spokane, Washington 99212; Brian Batch, 509-487-2122



Tacoma R/C Raceway, Tacoma, Washington 98406; Scott Brown, (253) 565-1935; web: www.tacomaraceway.com



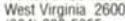
West Coast Hobby & Raceway, Richland, Washington 99352; Darren Shank, (509) 375-4995



Burr Fab R.C. Raceway, West Union, West Virginia 26456; Mark Travis, 304-873-2487; email: burrshouse1@cs.com



Fulton's R/C Raceway, Wheeling, West Virginia 26003; James Fulton, (304) 233-5355



Mountwood Raceway, Vienna, West Virginia 26105; Tom Allen, 304-295-3244; email: ray@rvrc.com; web: www.rvrc.com



Quiet Dell Raceway, Fairmont, West Virginia 26554; Darris, (304) 366-1441; email: tateracing@aol.com



WEST VIRGINIA

ABC R/C Inc & Raceway, Waukesha, Wisconsin 53186; Dick Mathiesen, 262-542-1245; email: Help@abcrchobby.com; web: www.abcrchobby.com



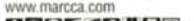
Gary's Hobby Center, Racine, Wisconsin 53403; Bill Phalen, 262-554-8884



KDM Raceway, Abbotsford, Wisconsin 54405; Kevin Michig, 715-223-4414; email: kdmhobby@charter.net; web: kdmhobby.homestead.com/kdmhobby.html



MARCCA Raceways, Poynette, Wisconsin 53955; Don Hartley, 608-243-1778; email: hotrodhartley@aol.com; web: www.marcca.com



Mid-West Tri-Clone/Tri-Clone OffRoad, West Bend, Wisconsin 53093; Dave Hilpert, 262-334-0429 or 262-626-2238; email: mwrt@hntr.com; web: www.tricloner.com



Pro-Star Racing, Green Bay, Wisconsin 54301; Chuck or Randy, Chuck-920-494-1233/Randy-920-336-5503; web: www.prostarracing.com



KEY TO SYMBOLS

- Indoor
- Outdoor
- Off-road
- On-road
- Oval
- Dirt oval
- Carpet

- Concrete
- Asphalt
- Minis & Micros
- On-site hobby shop
- AC power
- Auto lap counting
- Food available

S&N's Trackside Hobbies and Raceway, Milwaukee, Wisconsin 53005; Scott Ernst, 262-783-4699; email: sernst@trackside.com; web: www.trackside.com



The Shorthalf Raceway, Eau Claire, Wisconsin 54701; Scott Schoettle, 715-838-8350; email: Scattschoettle@comcast.net



WYOMING

Xtreme Hobbies Raceway, Gillette, Wyoming 82718; Krieg Balls, 307-682-6077; email: xtreme@vcn.com



ARGENTINA

Circuito R/C Lobos, Lobos, Buenos Aires 7240; Rupert Bruce, 54-0227-42905; email: rclobos@yahoo.com; web: www.rclobos.8m.com



Circuit M.R. Models, Buenos Aires 1428; Maximiliano Roballos, 54 11 4557 1000; fax 4780 1677; email: info@kyoshi-argentina.com.ar; web: www.kyoshi-argentina.com.ar



Club A. Velez Sarsfield, Buenos Aires; Jorge Herrero, 54-01-658-5851



AUSTRALIA

A.C.T. Model Car Racing Club, Wannissa, ACT; Gary Davey, 61-6-2871411



A.C.T. Remote Control Car Club, Kambah, ACT; Rob Jorgensen, 61-2-6231-9925; email: bjorgo@stt.gov.au; web: users.bigpond.net.au/gry@actrcrc.html



Aubry R/C Car Club, Aubry, New South Wales 2640; Ron Langman, 060-247-128



Brisbane Dirt Racing, Brisbane, Queensland 4053; Jeff Chandler, 07 3555 7476, 041 878 3201; email: big-fix@bigpond.net.au; web: www.users.bigpond.net.au/bigfix



Canberra Off-Road Model Car Club, Narrabundah, ACT; 2604; Graham Brown, 61-6-241-3070



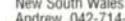
Carine R/C Model Car Club, Inc., Greenwood, Western Australia; Mitchell Davies, 0418 955 981; email: t3davies@inet.net.au



Castle Hill Radio Control Off Road Car Club, Castle Hill, New South Wales 2754; Peter Ellis, 0412 257 353; email: chrcor@nextcentury.com.au; web: www.2.nextcentury.com.au/chrcorcc



Central Coast ORRC, Bateau Bay, New South Wales 2261; Peter J. Knight, 61-43-693-698



Illawarra RCECC, Albion Park Rail, New South Wales 2527; Mel or Andrew, 042-714-683



Lakeside R/C Racing Club, Lansvale, New South Wales 2166; R Bartolozzi, 62-2-907-5800



Melton Electric Circuit Car Association, Melton, VIC 3337; Arthur Joslin, 61-3-9747-8805



Monaro Radio Control Car Club, Queanbeyan, New South Wales 2902; Graham Brown, 02 6241 3070; email: gbrown@webone.com.au; web: www.webone.com.au/~gbrown/mrccc/index.html



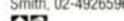
NSW Indoor R/C Raceway, Hurstville, Sydney 2220; Anthony Lee or Walter Ly, 02-9585-8810



Penfield Park, Adelaide, South Australia 5108; Trevor Unew South Wales, 07 618-5289-5010



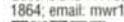
R.C. Speedway, Newcastle, New South Wales 2300; Andrew Dillon-Smith, 02-49265966



TFR - Templestowe Flat Track Racers, Templestowe, Victoria 3106; Nigel George, see website; email: tfr@imagefile.net; web: drive.to/tfr



The Bayside Raceway, Brisbane, Queensland 4178; Nigel Bell, 07 3893 1864; email: mwr1@dingobling.net.au



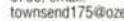
Victorian Radio Control Drag Racing Association, Melbourne, VIC 3940; John de Tracy, 03 59820459; email: bjrn1@hotmail.com; web: www.ozemail.com.au/~john95/index.html



Wee Waa's Offroad RC, Werrin Junction, New South Wales 2386; Shane, 02-612-6796-1339



Wodonga R/C Car Club, Wodonga, VIC 3690; Paul Townsend, 02-6056-0706; email: townsend17@ozemail.com.au



Cam R/C, Coquitlam, British Columbia V3E 1K9; Roger Brown, 604-945-3888



Circuit Teleguide ST Roch, ST Roch De L' Achigan, Quebec J0K 3H0; Gerald Beauchamp, 450-588-4254; email: gedoroam@calbot.ca; web: www.grcsl.com



Copetown Raceway, Copetown, Ontario N9Y 2V6; Bob Tanner, 519-326-3176; email: tanner@wincom.net; web: www.sparcracers.com



Dynamic Hobbies, Nepean, Ontario K2E7S4; Fred Zufelt, (613) 225-9634



HobbyHobby P.L.R.C., Mississauga, Ontario L5M 1K8; Tom Bakonyi, 905-858-7978; email: Info@hobbyhobby.com; web: www.hobbyhobby.com



Honda House Motor Speedway, Chatham, Ontario N7M 1P9; John Elliot, (519) 354-5530



IROCC, Victoria, British Columbia V9B 5W9; Daryl Jones, (250) 478-8013; email: dbjones@shaw.ca



Johns Jump & Grind R/C Track, Waterville, Nova Scotia B0V 1V0; John Egan, 902-538-8920; email: john.egan@ns.sympatico.ca; web: www.jagrcr.com



J-T International Raceway, Napanee, Ontario K7R 8A1; N. O'Neill, (613) 354-0099



Kays Hobbies R/C Raceway, Moorefield, Ontario NOG 2K0; Doug Kay, 519-638-9990; email: dougk@golden.net; web: www.kayshobbies.place.cc



Leading Edge R/C Speedway, Kingston, Ontario K7M 3Y5; Mike and Tony Daicar, 613-389-4878



Mid-Canada R/C Auto Racing, Winnipeg, Manitoba R2J 4E6; Jason McBride, 204-231-3324; email: mid-canadarca@mts.net; web: www.mid-canadarcautoring.com



Minatures & Passions, Ste. Therese, Quebec J7E 2B4; Gilles Lachance, (450) 979-7989



Hobby Planet Racing Club, Campinas, Sao Paulo 13091901; Daniel Helio, Luciano, 019 258 2768



Jungle Drive, Rio de Janeiro, PB 21940-490; Paulo Brito, (021) 396-0851 or (021) 393-4744



Off Roaders, Sao Paulo, CEP 05640- Waldir Ielpo, (055) 011-831-4931



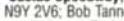
ATN, Saint-Jean-Baptiste-de-Nicolet, Quebec J3T 1E5; Louis Durand, (819) 293-6097; email: durand@sogetel.net; web: public.sogetel.net/lurdan/



C.A.R.C.A.R., Calgary, Alberta; Kerry Nevatte, 403-630-8852; web: www.carc.ca



Cactus Speedway, Kingsville, Ontario N9Y 2V6; Bob Tanner, 519-326-3176; email: rtanner@wincom.net; web: www.sparcracers.com



Cam R/C, Coquitlam, British Columbia V3E 1K9; Roger Brown, 604-945-3888



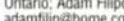
Circuit Teleguide ST Roch, ST Roch De L' Achigan, Quebec J0K 3H0; Gerald Beauchamp, 450-588-4254; email: gedoroam@calbot.ca; web: www.grcsl.com



Copetown Raceway, Copetown, Ontario N9Y 2V6; Adam Filipowicz; email: adamfilip@home.com; web: copetownraceway.8k.com



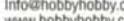
Dynamic Hobbies, Nepean, Ontario K2E7S4; Fred Zufelt, (613) 225-9634



HobbyHobby P.L.R.C., Mississauga, Ontario L5M 1K8; Tom Bakonyi, 905-858-7978; email: Info@hobbyhobby.com; web: www.hobbyhobby.com



Honda House Motor Speedway, Chatham, Ontario N7M 1P9; John Elliot, (519) 354-5530



IROCC, Victoria, British Columbia V9B 5W9; Daryl Jones, (250) 478-8013; email: dbjones@shaw.ca



Johns Jump & Grind R/C Track, Waterville, Nova Scotia B0V 1V0; John Egan, 902-538-8920; email: john.egan@ns.sympatico.ca; web: www.jagrcr.com



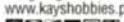
J-T International Raceway, Napanee, Ontario K7R 8A1; N. O'Neill, (613) 354-0099



Kays Hobbies R/C Raceway, Moorefield, Ontario NOG 2K0; Doug Kay, 519-638-9990; email: dougk@golden.net; web: www.kayshobbies.place.cc



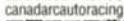
Leading Edge R/C Speedway, Kingston, Ontario K7M 3Y5; Mike and Tony Daicar, 613-389-4878



Mid-Canada R/C Auto Racing, Winnipeg, Manitoba R2J 4E6; Jason McBride, 204-231-3324; email: mid-canadarca@mts.net; web: www.mid-canadarcautoring.com



Minatures & Passions, Ste. Therese, Quebec J7E 2B4; Gilles Lachance, (450) 979-7989



Mid-Canada R/C Auto Racing, Winnipeg, Manitoba R2J 4E6; Jason McBride, 204-231-3324; email: mid-canadarca@mts.net; web: www.mid-canadarcautoring.com



Mini-Z Hobby Shop, Markham, Ontario L3R 0W4; Brian Pong, (905)940-0898; email: info@minizhobbyshop.com; web: www.minizhobbyshop.com



Prince George Radio Controlled Car Club, Prince George, British Columbia V2M 5R9; Doug Waller, 250-561-0035



R/C Champ Raceway, Scarborough, Ontario M1H 3A4; Ben, Matthew or Louie, (416) 289-8717; web: www.rccamp.com



R/C Fanatic, Charlesbourg, Quebec G1G 3Y4; Marc Page (Club President), 418-265-2678; email: info@rcfanatic.com; web: www.rcfanatic.com



Recreation R/C Raceway, Prince George, British Columbia; Doug Waller, (604) 561-0035



Steeltown Speedway, Binbrook, Ontario L0R 1C0; Trevor Harrison, 905-692-3407 (ask for Trevor); email: the_prodigy@zdmnetonebox.com; web: www.geocities.com/s_speedway



Sudbury Organized Auto Racing, Val Caron, Ontario P3E 1E6; Brad Peacock, 705-897-1435(Brad); email: soarsudbury1@hotmail.com; web: www.sudburycrc.no-ip.com



The All New R.C. World, Hamilton, Ontario L0R 1W0; Dave, Larry or Brian, (905) 765-2301 or (905) 333-3297



Thompson Valley R/C Raceway, Kamloops, British Columbia V2E 2K7; Brent Wende, (250) 372-2917; email: tvrcrc@shaw.ca



Vancouver R/C Road Racers, Coquitlam, British Columbia V3E 1K9; Roger Brown, (604) 945-3888



CHILE

Nico Prohens Off/On Roaders, Ovalle, 4 Region 1, Nicolas Prohens, (56) 53-711579; email: nprohens@entelchile.net; web: 38939070.home.icq.com/



OFF/ON ROADERS, Santiago, Region Metropolitana 1; Mauricio Wetter Ferrer, (56)09-8404174; email: mwetter@entelchile.net; web: 38939070.home.icq.com/



COLOMBIA

Club De Automodelismo Colombiano, Sanatafe De Bogota D.C., Bogota; Jorge Delgado, 1-6130588



Garoso Raceway, Cucuta; Gabriel Rodriguez, 975-751892



COSTA RICA

Club de Automodelismo RC10 Costa Rica, San Jose, San Jose; Osvaldo Averhoff A, (506)2862353; email: nitro-cr@hotmai.com



Hobbymania, Hispanidad San Pedro, Montes de Oca; Randall Jimenez, 506-280-9078; email: hobbymaniacstore@hotmail.com; web: www.hobbymanias.com



CYPRUS

Racing Model Club, Nicosia; Andrea Sotiriou, 493186; fax 493229



DENMARK

Brondby Motor Club, Brondby 2605; Soren Bay Holst, 45-36-472-462



Holstebro R/C Buggy Club, Holstebro 2600; Michael Brusholt, 45-97-412-734



Klub 144 Raceway, Lyngby 2800; Henrik Carstens, 45-42-88-3691



Rainbow Raceway, Copenhagen 2600; P. Christiansen, 45-52-848-504

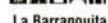


Thor Minirace Odense, Odense N° 5240; Ulrich Rasmussen, 45-65-303-707



DOMINICAN REPUBLIC

Adoca R/C Speedway, Santo Domingo, (809) 220-5266



La Barranquita R/C International Speedway, Santiago, (809) 582-2303



ENGLAND

Chessington Radio Car Club, Worcester Park, Surrey; Ian Spiller, 0252-20657



Hampshire Racing Center, Basingstoke, Hampshire; Tony Eudola, 44-1276-61402



Hinckley RCCC, Hinckley, Leicestershire; Bruce, 01455-890580



Netterton Market Model Car Club, Norwich, Hampshire NR16 2JU; Lee Shore, 01760 724857; email: kekezza@fsmail.net; web: www.wheelspins.co.uk

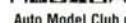


Worcester Model Car Club, St. John's, Worcester WR2 6Q9; Mr. Hardy



FRANCE

Auto Electron, Limoges 87000; M. Boudoul, 55 062763



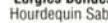
Auto Model Club de l'ouest, Lojerhet 29470; Peuzat Michel, 98071764



Crame Roncq, Mons el Baroeul; Michael Hondeky, 33-20042755



CSRMC, Lyon 69009; Pierre-Yves Monfroy, 06 78880852



Lorgies Bolides, Lorgies 62840; Hourdequin Sabine



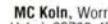
GERMANY

Dreykorn Raceway, Lauf 91207; Hermann Hensel, 09123-81457



MAC Zweibruecken, Huettflie 66909; Matthew Bailey, 011-49-6384-1388; email:

matthew_w_bailey@hotmail.com; web: www.geocities.com/matthew_w_bailey



MC Kolin, Worringen 50769; Ralf Habel, 02733-477493



Mini Car Club Dortmund, Dortmund 4600; Roland Schwan, 0231/213609



Oberhausen-Alstaden, Oberhausen 46099; Josef Holl, 0208-403676



Panik Raceway, Troisdorf 53844; Guido Kraft, 0224-400259



HONDURAS

Autodromo Accion, San Pedro Sula; Colonia Rivera Hernandez; Eduardo Hondal, (504) 52-2061



HONG KONG

H.K.R.C. Model Car Racing Club, Hong Kong; Alex Chan, (852) 659-2822



Kingsville Buggy Arena, Shatin, Pak Yeung, (852) 607-0828



INDONESIA

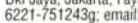
Abadi Circuit, Bandung, Java Barat 40141; Adi Darmawan, 62-22-2012250; email: darmawan@bdg.cen-trn.net.id



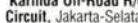
Ancol, Jakarta, ACT 14350; Andre Supryana, 62 21 6506040; email: andre@cbn.net.id; web: www.auvis.com/ja



Jakarta International Twin Circuit, Dki Jakarta, Jakarta; Fayakhun Andriadi, 6221-751243; email: fayakhun@sooon.com



Karinda Off-Road R/C Car Model Circuit, Jakarta-Selatan 12440; Wivied W. Soedarmadi, 62-21-7900878



Pondok Cabecircut, JL. Kunir No. 83, Jakarta; Ali Agus Salim, 7403568-9; fax 7491533



ISRAEL

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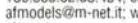


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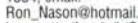
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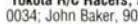
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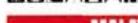


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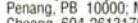


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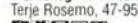
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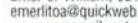
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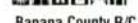
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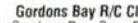
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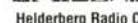
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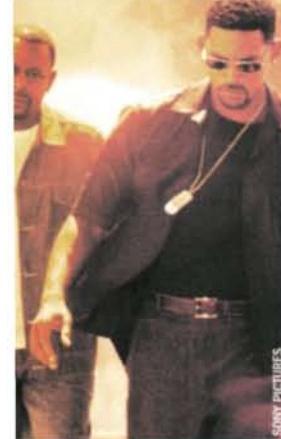
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HOLLYWOOD RC

We live and breathe RC around here, so when intern Andy Craycraft came running in babbling about the cool scene in "Bad Boys II" with an RC truck in it, I had to check it out. Sure enough, a Tamiya TXT-1 had a cameo as a bomb that dispatches some drug-lord bad guys. It's the latest moment in the Hollywood spotlight for RC; here are some more scene-stealing RC machines. Now, if they could just make a movie where the RC car isn't blown up or destroyed....



Bad Boys II Explosive TXT-1

The premise for the sequel is that Will Smith and Martin Lawrence are back in action to do battle with a Miami drug lord. The RC stuff comes into play when this modern-day dynamic duo need to infiltrate the headquarters of their nemesis. Since hurling a bomb over the wall would be too simple, a Tamiya TXT-1 is used to deliver a chunk of C4 explosive to the compound's guards.

"Bad Boys" II wasn't out on DVD at press time for us to get screen grabs, so we mocked our own "explosive" TXT-1. Don't get nervous, those are bundled-up road flares and a \$1.99 digital clock on the chassis, not dynamite. Our truck may come in handy for telling time and fixing a flat at night, but it won't be doing any exploding.



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The Dead Pool Killer Corvette

Remember this scene from the Clint Eastwood flick "The Dead Pool"? Dirty Harry Callahan takes on a homicidal maniac who wheels an RC car (an RC10 piloted by the legendary "Jammin'" Jay Halsey) that's rigged with explosives. Inspirational, huh? I bet someone who was involved in writing the screenplay for "Bad Boys II" really dug this installment to the Dirty Harry series.

"The Dead Pool" must also hold the record for the longest RC scene—it lasts about 10 minutes. This film is now available on DVD; when you watch it, be sure to look for Jim Carrey (as in "Ace Ventura: Pet Detective") in one of his first movie roles, and the members of Guns N' Roses also step in for a brief cameo.



Ocean's Eleven Busted Bronco

This Warner Bros. remake of the 1960's Rat Pack classic has a cool drag-racing scene between a 1/4-scale RC truck and a full-size truck. It shows why you shouldn't race your RC stuff against real cars. The RC car smokes its tires off the line, starts to pull the full-size Bronco but then is taken out in spectacular fashion by the full-size truck's driver so he can avoid the humiliation of losing to a toy.

It certainly looks as if the RC vehicle in that scene was a 1/4-scale monster from New Era, but production companies can be pretty tight-lipped. New Era frequently sells RC items to production companies, but Hollywood keeps the information about why they need those things a secret. Even the manufacturers have to wait to see if their stuff pops up on the big screen. ■



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